

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

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COMCAST CABLE : CIVIL NO. 12-859  
COMMUNICATIONS, LLC, :  
et al., :  
Plaintiff :  
  
v. :  
  
SPRINT COMMUNICATIONS : Philadelphia, Pennsylvania  
COMPANY L.P., et al., : February 3, 2017  
Defendant : 9:46 a.m.

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TRANSCRIPT OF MORNING SESSION OF JURY TRIAL DAY 5  
BEFORE THE HONORABLE JAN E. DUBOIS  
UNITED STATES DISTRICT JUDGE

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APPEARANCES:

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1 (The following was heard in open court at  
2 9:46 a.m.)

3 THE COURT: Good morning.

4 ALL: Good morning, Your Honor.

5 THE COURT: Be seated, please.

6 Notwithstanding my comments to the jury last night  
7 about getting here on time, several didn't so we're  
8 starting a little late. One juror had some comments,  
9 juror number 5. He said I'm over 70; I don't have to  
10 serve on the jury. And, of course, jurors 70 who are  
11 called can seek an excuse for the jury service. He  
12 didn't. I thought I would share that with you. Is  
13 there an issue we have to address? I think now. But  
14 I'll hear from Comcast. Mr. Goettle?

15 MR. GOETTLE: So is the juror going to be  
16 sitting on the jury?

17 THE COURT: He's sitting.

18 MR. GOETTLE: Oh.

19 THE COURT: The rule says jurors called for  
20 jury duty, prospective jurors, over the age of 70 can  
21 be excused, but not after their on a jury.

22 MR. GOETTLE: Oh, okay.

23 THE COURT: If he had raised this issue  
24 earlier, I would have had to check the jury plan. I  
25 haven't looked at it in a while. But I think they're

1 automatically excused if they request, but they're  
2 not disqualified from jury service.

3 MR. GOETTLE: Okay. I --

4 THE COURT: Unless you both feel  
5 differently about this. We'll do it by agreement of  
6 the two of you, or he stays.

7 MR. GOETTLE: Your Honor, is this something  
8 we -- I'd like to confer with Mr. Hangle.

9 THE COURT: Absolutely.

10 MR. GOETTLE: Can we confer and --

11 THE COURT: Just wanted to share it with  
12 you. Whenever we have any communication with the  
13 jury my rule is I share it immediately, significant  
14 or not significant, so you'll know whatever the  
15 jurors have said to us.

16 MR. HANGLEY: Your Honor, has he requested  
17 to be relieved?

18 COURTROOM DEPUTY: Yes and no.

19 MR. HANGLEY: Okay. I know what that  
20 means. I've met the man. This isn't something that  
21 we have to decide this minute?

22 THE COURT: Absolutely doesn't have to be  
23 decided.

24 MR. HANGLEY: Okay. I'd kind of like to  
25 kick it around with my colleagues, but also with you

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1 folks to see if we can come to -- it's not an easy  
2 decision.

3 THE COURT: Sprint?

4 MR. FINKELSON: We're happy to discuss it  
5 with Comcast, but I suspect -- I suspect we'll -- we  
6 would like the juror to continue to serve.

7 THE COURT: All right.

8 MR. FINKELSON: But we'll discuss it with  
9 them and report back.

10 THE COURT: All right. Are you ready to  
11 proceed? Is Dr. Akl here?

12 MR. GOETTLE: He is, Your Honor.

13 (Jury in, 9:51 a.m.)

14 THE COURT: Good morning, everyone. Please  
15 be seated. Mr. Goettle, are you ready to proceed?

16 MR. GOETTLE: I am, Your Honor.

17 THE COURT: Well, you may continue your  
18 direct examination of Dr. Robert Akl.

19 MR. GOETTLE: Thank you.

20 DIRECT EXAMINATION

21 BY MR. GOETTLE:

22 Q Good morning, Dr. Akl.

23 A Good morning.

24 Q Dr. Akl, yesterday, we handed you three binders  
25 that I think are sitting on the floor next to you,

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1 and kind of as a housekeeping matter, I'd like to  
2 turn to those if we can. Can you pull out -- well,  
3 first of all, do you have those bind -- the binders  
4 divided up in any way?

5 A Yes, I have three binders. The first one is for  
6 the SPS and MLDAP, messaging LDAP.

7 Q Okay. And what is in -- what are in the binders?

8 A It contains documents that I have considered and  
9 looked at and analyzed, or at least some of the  
10 documents, in reaching the conclusions that I have.

11 Q Are those -- are those all of the documents that  
12 you have reviewed in doing your analysis and coming  
13 to your conclusions?

14 A No, they're not. They're just some of the  
15 documents that we're asking to be submitted into  
16 evidence I believe.

17 Q And has the jury seen some of those documents  
18 throughout your presentation over the course of  
19 yesterday?

20 A Yes.

21 Q Okay. Can you, please, for the record, could you  
22 read in the PX numbers that are on each of those  
23 documents?

24 A PX-1, PX-2, PX-44, PX-94, PX-99, PX-114, PX-115,  
25 PX-118, PX-120, PX-125, PX-127, PX-174, PX-186,

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1 PX-218, PX-353, PX-526, and PX-547.

2 Q Thank you.

3 MR. GOETTLE: Your Honor, those -- most of  
4 those exhibits are a part of our omnibus motion that  
5 the Court had granted. A few of them are exhibits  
6 that are not part of the omnibus motion, but do not  
7 stand objected to. So I admit them into evidence to  
8 the extent that they're not already.

9 MR. FINKELSON: Your Honor, we're just  
10 checking our list quickly to make sure that that is  
11 correct, and then we'll --

12 MR. GOETTLE: And note to the Comcast side,  
13 we will get that list to the other side before this  
14 happens in our other examinations.

15 THE COURT: Thank you.

16 (Pause in proceedings.)

17 MR. GOETTLE: Your Honor, I'll switch gears  
18 and come back to this so that we don't have to pick  
19 up --

20 THE COURT: Are these exhibits -- I note  
21 they have PX numbers. Are they in your boxes of  
22 exhibits?

23 MR. GOETTLE: Yes, sir. Yes, sir.

24 THE COURT: With the same numbers?

25 MR. GOETTLE: Yes. This is essentially a

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1 subset of what was in the boxes that are --

2 THE COURT: Fine.

3 MR. GOETTLE: -- are not objected to.

4 THE COURT: Fine.

5 (Pause in proceedings.)

6 MR. FINKELSON: Your Honor, we have no  
7 objection to any of the ones enumerated with the  
8 potential exception of 97, and we'll check on that  
9 one while Mr. Goettle is conducting his examination.

10 THE COURT: 97?

11 MR. GOETTLE: I don't think he said --

12 MR. FINKELSON: He didn't say 97?

13 MR. GOETTLE: Do you have 4?

14 THE COURT: 97 is not among those  
15 identified.

16 MR. FINKELSON: That's why we're objecting  
17 to it, Your Honor.

18 THE WITNESS: 94 to 99.

19 MR. GOETTLE: 94 and 99.

20 THE WITNESS: Yes.

21 MR. GOETTLE: Not to.

22 THE WITNESS: I'm assuming so.

23 MR. GOETTLE: Yes. Okay. I'll --

24 THE COURT: Well, why don't --

25 MR. GOETTLE: I'm going to --



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1 THE COURT: -- we do this? We'll move --  
2 we'll --

3 MR. FINKELSON: No objection.

4 THE COURT: All right.

5 MR. FINKELSON: And I apologize for the  
6 delay, Your Honor.

7 THE COURT: Well, and there's no reason  
8 why, Mr. Goettle and -- well, both sides, if we're  
9 going to do this again, let's exchange those lists --

10 MR. GOETTLE: Yeah.

11 THE COURT: -- before you present them to  
12 the --

13 MR. GOETTLE: I will do that, Your Honor.

14 THE COURT: -- to the witness.

15 MR. GOETTLE: I thought I had, but I will  
16 do that.

17 THE COURT: All right. Well, those  
18 exhibits, I'm not going to repeat them all, but all  
19 of those exhibits are received into evidence.

20 (Plaintiff's Exhibits 1, 2, 44, 94, 99,  
21 114, 115, 118, 120, 125, 127, 174, and 186,  
22 documents, are received into evidence.)

23 BY MR. GOETTLE:

24 Q Okay. Doctor, we'll come -- Dr. Akl, we'll come  
25 back to the other binder later after we clear --

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1 reach the skids. So let's go to -- back to your  
2 presentation. We were on slide 154 out of just  
3 slide -- out of a total set of slides up to 161, so  
4 we're very close. So what are you showing on slide  
5 154?

6 A I'm showing there is an Acision SMSC -- Acision  
7 is a vender -- Comverse SMSC -- again, Comverse is  
8 another company that makes SMSCs. And there are  
9 dates, start dates and end dates and locations  
10 associated with these messaging servers.

11 Q You know what, that actually reminds me. For all  
12 of the components on all of the elements that you  
13 have talked about over the -- over the course of your  
14 testimony for the SMSCs, MMSCs, HLRs, and all the  
15 various other ones, are they all in the United  
16 States?

17 A Yes.

18 Q Okay. And is -- has the Acision SMSC been used  
19 in Sprint's network in conjunction with sending and  
20 receiving SMS messages since 2008?

21 A Yes.

22 Q Okay. And is the Acision SMSC, in your opinion,  
23 a messaging server?

24 A Yes, it is a messaging server.

25 Q Okay. And now let's go down to the Comverse

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1 SMSC. What is the difference between the Comverse  
2 SMSC and the Acision SMSC?

3 A So the Comverse SMSC was originally deployed in  
4 '98, and I briefly touched upon it yesterday, when in  
5 '98, it was mobile terminated only, which means at  
6 the time in 1998, Sprint was not doing two-way text  
7 messaging, but you had premium content like  
8 horoscopes, for example, that can be delivered to the  
9 phones. So that was in '98 using mobile terminated  
10 Comverse SMSCs.

11 Q So in 1998, could a Sprint subscriber send a text  
12 message to another Sprint subscriber?

13 A No.

14 Q And in 1998, could a Sprint subscriber receive a  
15 text message from another Sprint subscriber?

16 A No.

17 Q How about from or to another sub -- a subscriber  
18 on another network?

19 A No.

20 Q Okay. When was that functionality added?

21 A 2004.

22 MR. GOETTLE: Can we go to the next slide?

23 Oh, I have the clicker. I forgot.

24 BY MR. GOETTLE:

25 Q Okay. So what are you showing on slide 155?

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1 A So this is PX-386, and in the first quarter of  
2 2004, Sprint launched two-way text messaging to all  
3 their handsets.

4 Q Okay. And that -- you were -- you were looking  
5 at PX-386?

6 A Yes.

7 Q Okay. Dr. Akl, yesterday, you mentioned other  
8 components that at times -- periodic times in  
9 Sprint's network formed part of Sprint's messaging  
10 servers, and I'd like to talk about that in just a  
11 little more detail for a minute. What was one --  
12 what was one of those components?

13 A So the messaging servers would sometimes -- or in  
14 certain periods of time would query directly, or they  
15 can query through a component. And an example is the  
16 SMS router or the PDR. So if -- maybe if we can go  
17 back to the previous slide, it may help --

18 Q Okay.

19 A -- because we have -- so for the Comverse SMSC,  
20 the mobile terminated SMSC -- and at different points  
21 in time, you know, after 2004, there was mobile  
22 originated, so we had two-way text messaging. But  
23 with regard to the Comverse SMSC, the mobile  
24 terminated, for example, after 2004, when there was  
25 two-way text messaging the querying can be done

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1 directly, or in some cases the messaging server  
2 queried through a PDR, which is a pre-destination  
3 router. Another name for it in some of the documents  
4 is SMS router.

5 I was going to say for the mobile  
6 originated Comverse SMSCs it did not, so now we're  
7 kind of breaking down to the details of the different  
8 components in -- so the PDR, or the SMS router is a  
9 component in Sprint's messaging network that the  
10 messaging server would query through. We talked  
11 about how the messaging server has the two  
12 functionalities of storing a message and forwarding  
13 the message -- that's the first functionality -- and  
14 being able to query the cellular network. So the  
15 query sometimes went through this component, the PDR  
16 or the SMS router, to the messaging LDAP, and the  
17 messaging LDAP was one of the subscriber databases  
18 that we described yesterday.

19 Q Okay. Are -- were there any other components in  
20 Sprint's network that worked similar -- in a similar  
21 fashion to the PDR over the course of time --

22 A Yes.

23 Q -- from 2004 --

24 A So the Acision SMSC also used for a short period  
25 of time a PDR, and then it used an SLP, and an SLP is

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1 a service logic processor. So, again, it is another  
2 component in Sprint's messaging network that was used  
3 to query through, for example, the SPS, which was the  
4 subscriber database that we have described.

5 Q Were there any others?

6 A There was one called OMG, which is the open  
7 messaging gateway, and it was used only for prepaid  
8 service in some periods of time.

9 Q Okay. Now let's switch gears. I know we have  
10 the SMSC slide up, but let's -- while were on this  
11 subject let's talk -- let's talk about the MMSC.  
12 Did -- were there any types of components used in  
13 conjunction with Sprint's MMSC?

14 A Yes, there are two components. One we've heard.  
15 This is the SLP. And the second one is the HSP,  
16 which is a high speed proxy. Again, these are all  
17 components in Sprint's messaging network that the  
18 messaging server initiated a query through to the  
19 subscriber database like the SPS or the messaging  
20 LDAP that we talked about.

21 Q Okay.

22 MR. GOETTLE: Mr. Dyer, can you put up  
23 PX-174?

24 BY MR. GOETTLE:

25 Q And I believe, Dr. Akl, that you testified --

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1 well, let me ask you, were these -- were these  
2 components that you just referred to, were they  
3 components of -- core network elements of Sprint's  
4 cellular network or were they part of Sprint's  
5 messaging network?

6 A They are part of Sprint's messaging network.  
7 This is a slide that I had shown yesterday. This is  
8 a document -- we've zoomed out, so I don't have the  
9 PX number for that document.

10 Q It's PX -- oh, it's on your screen now.

11 A Okay, PX-174. And now if we can zoom back in?  
12 The title of the document is "Messaging Network  
13 Components," and some of the acronyms that I've  
14 described are on this list. For example, we've been  
15 talking about the SMSC. We have an MMSC, the terms  
16 "mobile originated" and "mobile terminated," and then  
17 if we go back to the -- we have the SLP, I've talked  
18 about that; the PDR, that's the pre-destination  
19 router; OMG, the open message gateway. I think  
20 I've -- so these are all components of Sprint's  
21 messaging network that the messaging server would  
22 query through at different points in time the SPS and  
23 the messaging LDAP.

24 Q And is what you're looking at, is this a Sprint  
25 document?

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1 A Yes, this is a Sprint document.

2 Q Okay. So in terms of what the messaging server  
3 is in Sprint's network, for example, when it was  
4 the --

5 MR. GOETTLE: Can we go back to the slide  
6 deck? Thanks?

7 (Pause in proceedings.)

8 BY MR. GOETTLE:

9 Q When we're -- when we're thinking about the use  
10 of Comverse as a supplier of the SMSC after 2004, the  
11 mobile originating Comverse SMSC, the SMSC that was  
12 charged with dealing with the messages coming from  
13 Sprint subscribers to go out to other people, did  
14 those query through any of these other components  
15 that you were talking about?

16 A No.

17 Q So for that period of time when that -- when that  
18 SMSC from Comverse was being used what was Sprint's  
19 messaging server?

20 A The Comverse SMSC.

21 Q Okay. And then for the period of time where the  
22 messaging server -- excuse me, when the Comverse SMSC  
23 was being used to receive message -- SMS messages  
24 from other people what was the messaging server when  
25 that was being used?



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1 A So the Comverse SMSC with the PDR or with the SMS  
2 driver.

3 Q Now, is that -- is that common for skilled  
4 artisans to think about the messaging server  
5 functionality, as the Court has construed the term  
6 "messaging server?" Is that a common thing for  
7 skilled artisans to think about, the combination of  
8 two different computers as being the messaging server  
9 or is that uncommon?

10 A No, it is common. When we talk about  
11 functionality that functionality doesn't have to  
12 reside in one computer. And so if you have a  
13 component that's assisting or the querying is going  
14 through a component, that's perfectly fine. You just  
15 draw a box or a circle around both as the messaging  
16 server.

17 Q Okay. And you referred to another component  
18 called an OMG, yet another three letter acronym for  
19 something?

20 A Yes. And so the combination of the SMSC with the  
21 OMG would be the messaging server for that period of  
22 time that the querying went through the OMG.

23 Q Okay. And then SL -- you referred to SLP with --  
24 in conjunction with the SMSC. What's the messaging  
25 server there?

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1 A Yes. So for the period of time that the SLP, as  
2 a component, was used, the query went through it then  
3 the messaging server would be the SMSC with the SLP.  
4 So a lot of acronyms, but we have to get it on the  
5 record.

6 Q Okay. Last one. The MMSC, I believe you talked  
7 about an HSP and an SLP at different periods of times  
8 being used. What as the messaging sever in Sprint's  
9 network with respect to those periods of times?

10 A So the messaging server would be the MMSC with  
11 the HSP or the MMSC with the SLP.

12 Q Okay. Okay. So let's turn and talk about the  
13 MMSC just in terms of the dates on when the Acision  
14 MMSC was used in Sprint's network.

15 A Yes. So for what we have to -- for the case in  
16 question, it's May 2014 to the present.

17 Q Okay. And during that period of time when -- I  
18 hadn't -- I forgot to ask you this yesterday, but  
19 during that period of time when the -- when the MMSC  
20 was being used for messaging in conjunction with the  
21 SPS or the HLR were the steps that you walked through  
22 followed every time that a Sprint subscriber sent or  
23 received an MMS message?

24 A Yes.

25 Q Okay. And yesterday, you also walked through

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1 Sprint's infringement with respect to its HLRs?

2 A Yes.

3 Q Every time that a Sprint subscriber received an  
4 SMS or an MMS message over the period of time  
5 relevant to this case, back to 2006, did each one of  
6 those receptions constitute an act of infringement by  
7 Sprint?

8 A Yes, because you needed to know the location of  
9 the phone, and you would look in the HLR. And since  
10 we're -- we brought up the HLR, when the querying was  
11 done those components I don't believe, looking at the  
12 evidence, queried -- the messaging server did not  
13 query through those components of the HLR.

14 Q Okay. Oh, I see. So when the -- when the query  
15 was being done from the HLR was the -- any of the  
16 PDR, SLP, OMG, or HSPs, were those ever used?

17 A No, it was for the messaging LDAP and the SPS,  
18 but not to the home location register subscriber  
19 database.

20 Q Okay. Then what component sent the query to the  
21 HLR?

22 A The messaging server, the SMSC or the M -- the  
23 SMSC -- SM -- sorry, SMSC, correct.

24 Q Okay. And then was -- is that -- was that true  
25 over the time period from the relevant time of

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1 February 2006 through today?

2 A Yes.

3 Q Okay.

4 (Pause in proceedings.)

5 Q Okay. So what are we going to talk about next,

6 Dr. Akl? What do you have on slide 159?

7 A So the last portion is really as a result of a  
8 conversation that I had with a Comcast damages  
9 expert, which you're going to hear from later, Ms.  
10 Riley. And Ms. Riley is going to discuss damages.  
11 And as part of the math that she does, I was asked to  
12 look at the steps and provide her with kind of like a  
13 summary or a number of the infringing steps from a  
14 technical point of view that she can use when she  
15 does the math for damages, and that's what we're  
16 going to look at on the next couple slides.

17 Q Okay. So what are -- what are we looking at  
18 first?

19 A So what we're looking at is I'm numbering the  
20 steps. So this is for Sprint to Sprint, and you see  
21 we have step one where the message is sent from the  
22 phone to the messaging server and then the  
23 acknowledgment back, so this is two. Three and four  
24 are the steps that infringe. We've talked about the  
25 inquiry. That's what reads on the first limitation

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1 in the claim. And the four is the response, the  
2 fourth limitation in the claim. And then five is  
3 another step. So I'm counting here two out of five.  
4 And if you recall my discussion from yesterday, there  
5 are two steps that happen inside the SPS, the mapping  
6 step in the claim and the determining step in the  
7 claim. And since they're not shown on this figure,  
8 I'm not counting them. And this is actually good for  
9 Sprint. So I'm being very conservative. Instead of  
10 saying four out of five steps infringe, which would  
11 probably translate to more money, I'm saying two out  
12 of five would infringe. So any time there was a  
13 decision that I had to make in terms of counting the  
14 steps -- and I believe Ms. Riley is going to testify  
15 when she had a decision to make in terms of what side  
16 to favor, we always favored Sprint. So the numbers  
17 that you're going to see and the number of steps are  
18 going to be the most conservative.

19 Q So, Dr. Akl, I think you said that had you  
20 counted the two steps that occur in the SPS, it would  
21 be four out of five?

22 A Oh, I misspoke. It would be four out of seven.

23 Q Okay.

24 A Yes.

25 Q And that would be -- that would be more favorable

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1 to Sprint than counting the steps as two out of five?

2 A Yes.

3 Q Okay. Okay. So this doesn't get confusing, can  
4 you explain how -- what you -- what we're looking at  
5 right now? Because we're going to do more counting  
6 as to other instrumentalities.

7 A Yes. So right now, we're just looking at the  
8 Sprint to Sprint and for the messaging server  
9 querying the SPS. And so we have two infringing  
10 steps out of five when sending for claims one, seven,  
11 and 113.

12 Q Okay.

13 A And we're gong to have -- all the scenarios that  
14 we walked through, the infringing scenarios, we're  
15 going to walk through them, but very quickly. So for  
16 the --

17 Q I apologize.

18 A Sorry.

19 Q Sorry about that.

20 A Yeah. So for the receiving, for claims one and  
21 seven, there's four out of seven steps. For the --  
22 for claim 113, because if you recall, the HLR is  
23 excluded -- the HLR does not infringe claim 113  
24 because claim 112 says no HLR, the home location  
25 register. So we've broken them down to claims one

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1 and seven for receiving is going to be four out of  
2 seven, and for claim 113, it's two out of seven.

3 Q Okay. And did you do that -- I think you  
4 testified you did that for all the other --

5 A Yes. So for the text messaging, Sprint to  
6 Sprint, this is the break down. For SMS, between  
7 Sprint and non-Sprint, I've provided the breakdown.  
8 This is just counting the infringing steps that we've  
9 already walked through in a lot of detail yesterday.  
10 And then the same thing for the multi-media messages.  
11 When you have multi-media Sprint to Sprint, again,  
12 for sending, receiving, I have the break down. And  
13 for multi-media messages between Sprint and non-  
14 Sprint for claims one, seven, and 113, and for claims  
15 one and seven and claim 113, what are the infringing  
16 steps.

17 Q So, Dr. Akl, it's a lot to grasp because there's  
18 a lot on that slide, but what is the lowest  
19 percentage number on there for each of the scenarios?

20 A 22 percent.

21 Q Okay. Okay.

22 MR. GOETTLE: Your Honor, I'd like to turn  
23 back to getting -- to admitting the exhibits. I  
24 can't remember if there was an objection on the  
25 exhibits from the first binder that --

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1 THE COURT: No, they're in evidence.

2 MR. GOETTLE: Okay. Okay.

3 BY MR. GOETTLE:

4 Q Dr. Akl, can you -- you have two other binders  
5 back there?

6 A Yes.

7 Q Okay. And one of those binders has just one  
8 exhibit in it?

9 A Yes.

10 Q What exhibit is that?

11 (Pause in proceedings.)

12 A So this is one document, one exhibit. It's  
13 PX-171.

14 Q And does that -- does that document related to  
15 the HLR or to the SPS?

16 A It relates to the HLR.

17 Q What is it?

18 A It's an Alcatel-Lucent document. It's titled  
19 "Alcatel-Lucent 1440 Unified Subscriber Data Server  
20 Release 8.2."

21 Q Why are you looking -- in doing your analysis,  
22 why are you looking at a document from a different  
23 company named Alcatel-Lucent?

24 A For the home location register subscriber  
25 databases, they were provided by Alcatel-Lucent. And



Dr. Akl - Direct

25

1 so I believe as a vendor, they were subpoenaed. They  
2 provided documents. Those documents were then placed  
3 in front of Sprint engineers during their testimony,  
4 and the Sprint engineer looked at the document and  
5 said yes, this is the document for the HLR. We use  
6 the HLR. And so I've looked at these documents to do  
7 my analysis of the home location register.

8 Q Okay. Turning to the other binder, the third  
9 binder, does -- do the doc -- what are the documents  
10 in that binder in terms of subject -- general subject  
11 matter?

12 A Again, they are also for the home location  
13 register.

14 Q Okay. And are those -- do -- have you seen those  
15 documents before?

16 A Yes.

17 Q And what did you look at them -- why did you look  
18 at them?

19 A To be able to carry on my analysis and come up  
20 with the conclusions that I've reached.

21 Q Okay. Would you please read the PX numbers of  
22 those documents?

23 A Yes. PX-49, PX-56, PX-161, PX-163, PX-164,  
24 PX-167, PX-168, PX-172, PX-177, PX-485, and PX-525.

25 Q Dr. Akl, will the jury be able to look at those

Dr. Akl - Direct

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1 binders during their deliberations?

2 A I believe so.

3 Q Okay.

4 (Pause in proceedings.)

5 THE COURT: Are you going to move those  
6 documents into evidence?

7 MR. GOETTLE: Oh, I should do that,  
8 shouldn't I? Yes, sir. So -- well, again -- well,  
9 yes, I move those into evidence, Your Honor.

10 MR. FINKELSON: No objection, Your Honor.

11 THE COURT: Those documents -- and I'll not  
12 repeat the numbers, but will certainly record them --  
13 are received into evidence.

14 (Plaintiff's Exhibits 49, 56, 161, 163,  
15 164, 167, 168, 172, 177, 485, and 525, documents, are  
16 received into evidence.)

17 MR. GOETTLE: Thank you.

18 BY MR. GOETTLE:

19 Q Dr. Akl --

20 THE COURT: 171, the Alcatel-Lucent  
21 document dealing with the HLR provided, is that --  
22 you didn't move that in evidence now. Was it  
23 previously received?

24 MR. GOETTLE: Your Honor, I move PX-171  
25 into evidence.

Dr. Akl - Direct

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1 THE COURT: PX-171 is received.

2 (Plaintiff's Exhibit 171, document, is  
3 admitted into evidence.)

4 BY MR. GOETTLE:

5 Q Dr. Akl, during Sprint's attorney's opening  
6 argument, do you recall him talking about a contract  
7 between Comcast and Sprint that had a definition for  
8 "core network?"

9 A Yes.

10 Q Did you -- did you look at that contract in  
11 performing your analysis and forming your  
12 conclusions?

13 A Yes, it was a contract -- it was a business  
14 contract between Comcast and Sprint. It was provided  
15 to me and I had looked at it as part of the analysis  
16 that I have done.

17 Q And in terms of when the patent issued in 1999,  
18 how much later was that contract?

19 A That contract was in 2008 and it was two years  
20 before Comcast bought the 870 patent. And it's nine  
21 years after the patent was filed by Nokia at the time  
22 in '99.

23 Q Okay. All right. So now just setting aside the  
24 timeline and the dates, would you look at a -- how  
25 would you consider a contract between parties in

Dr. Akl - Direct

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1 trying to decide whether an element of Sprint's  
2 network is a core network element of Sprint's  
3 cellular network?

4 A So this is a business contract and it was between  
5 two companies that wanted to lease resources. So  
6 Comcast wanted to rent, in a sense, Sprint's  
7 telecommunications network and be able to provide  
8 calls, SMS, didn't services, to Comcast subscribers  
9 using Sprint infrastructure. So from a business  
10 point of view, the terms in the contract are very  
11 general and very inclusive. As an engineer, I would  
12 not look at business definitions in a business  
13 contract to find the definitions that I would use in  
14 a technical sense.

15 Also, in this case -- so we have the  
16 Court's construction. We have definitions from the  
17 Court that come from the patent from 1999. And so  
18 the definitions in this contract between the  
19 companies is really irrelevant from an engineering  
20 point of view and a technical point of view to take  
21 those definitions and apply them to the patent.

22 Q And, Dr. Akl, during Sprint's counsel's opening  
23 argument, do you recall him saying that what Nokia  
24 invented in the 870 patent is directed to a very  
25 specific, a very particular way, of doing SMS and MMS

1   messaging?

2   A    Yes.

3   Q    Do you agree with that statement?

4   A    No.

5   Q    Why not?

6   A    Because looking at the patent, the patent is  
7   equally applicable due to the different third  
8   generation technologies, CDMA, CDMA2000, which is the  
9   technology Sprint uses.  It is also -- it's  
10   applicable to the network because what you want to do  
11   is you want to make the cellular network faster, you  
12   want to remove congestion, so regardless what  
13   technology you're using the methods and the invention  
14   of the patent -- and we've talked about the problem-  
15   solution, problem-solution -- moving the messages  
16   until the phone is ready to receive and this is where  
17   the messaging server is going to query, and then the  
18   message is going to be delivered, that is equally  
19   applicable to CDMA, to CDMA2000, and to GSM and third  
20   generation GSM.  So the invention itself is not  
21   dependent on what makes CDMA different from GSM.

22   Q    So, Dr. Akl, in your opinion, in 1999, would it  
23   have been straightforward to a company that -- if a  
24   company wanted to avoid practicing the invention of  
25   the 870 patent, would it have been a relatively

Dr. Akl - Direct

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1 straightforward -- would there have been a relatively  
2 straightforward way of doing that, of avoiding  
3 practicing the patent?

4 A In '99 -- in 1999, yes. So if you recall when I  
5 was describing messaging in 1999, you had text  
6 messaging, they're small, the number of messages that  
7 was being exchanged was not very high. As an adjunct  
8 service, it was not something that was very popular  
9 at the time. So it was very feasible to have the  
10 messaging server include functionality like the  
11 mobile switching center, like the home location. We  
12 saw, as an example, the Ericsson patent that did  
13 that. That would be an example of a cellular network  
14 that does not practice this patent because you have a  
15 core network element that does the functionality that  
16 is core and it includes the storing and forwarding  
17 and the querying.

18 This alternative, or this way of doing it,  
19 would have been feasible in 1999, but would not have  
20 been a feasible way of doing it later because even  
21 though the size of the message is still small, we  
22 went from millions to billions to trillions of text  
23 messages, and so that would not have been a feasible  
24 solution for the text messages later. And when we  
25 look at the multi-media messages, because of the size

Dr. Akl - Cross

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1 of these messages it would not be a feasible  
2 solution.

3 Q Why not?

4 A Because the size of the message itself is fairly  
5 large. So having those messages in the network,  
6 checking if the phone is there, and causing  
7 congestion would not have been feasible. And you  
8 have a lot of them. I mean you don't have the  
9 trillions of them, but there is still a significant  
10 number and their size is significant.

11 MR. GOETTLE: I have no further questions.  
12 Thank you.

13 (Pause in proceedings.)

14 THE COURT: You may cross-examine.

15 MR. FINKELSON: Thank you, Your Honor.

16 CROSS-EXAMINATION

17 BY MR. FINKELSON:

18 Q O-M-G, Dr. Akl, you know you're thinking it.

19 (Pause in proceedings.)

20 Q Good morning, Dr. Akl.

21 A Good morning.

22 Q You agree, don't you, Dr. Akl, that claim one of  
23 the 870 patent requires that the messaging server be  
24 external to the cellular network?

25 A Yes.

1 Q And if this jury concludes that Sprint's  
2 messaging servers are inside the core network of  
3 Sprint's cellular network, you agree that claim one,  
4 in that circumstance, would not be infringed,  
5 correct?

6 A Yes.

7 Q And that's true even if Sprint does the other  
8 steps of claim one, correct?

9 A Yes.

10 Q All of the other stuff you talked about  
11 yesterday, right?

12 A If the -- if you can just repeat the question?  
13 Thank you.

14 Q My question was and that's true even if Sprint  
15 does all of the other steps of claim one, correct?

16 A Yes.

17 Q And that includes all of the other stuff you  
18 talked about yesterday, right?

19 A Oh, yes.

20 Q It seems like -- it seems like ages ago, but it  
21 was just yesterday. Claim seven, Dr. Akl, also  
22 requires that the messaging server be external to the  
23 cellular network, doesn't it?

24 A Yes.

25 Q And that's because under the law, claim seven has



Dr. Ak1 - Cross

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1 included within it all of the requirements of claim  
2 one, right?

3 A Yes.

4 Q And if this jury concludes that Sprint's  
5 messaging servers are inside the core network of  
6 Sprint's cellular network, you agree that in that  
7 circumstance claim seven would not be infringed,  
8 correct?

9 A Yes.

10 Q And, again, that's true even if Sprint does all  
11 of the other steps of claim seven, right?

12 A Yes.

13 Q All of the other stuff you talked about  
14 yesterday?

15 A Yes.

16 Q And the same rules apply for claim 113, right,  
17 Dr. Ak1?

18 A Yes.

19 Q And that's because under the law, claim 113 has  
20 included within it all of the requirements of claim  
21 112, right?

22 A Yes.

23 Q Do you have a copy of the jury binder, Dr. Ak1?

24 A I don't think so.

25 MR. FINKELSON: Your Honor, may I approach?

Dr. Akl - Cross

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1 THE COURT: You may.

2 BY MR. FINKELSON:

3 Q Dr. Akl, I'm just handing you a copy of the same  
4 binder that this jury has.

5 A Thank you.

6 MR. FINKELSON: Mr. Baird, can we see tab  
7 two up on the screen?

8 (Pause in proceedings.)

9 BY MR FINKELSON:

10 Q If you could turn, Dr. Akl, to tab two of the  
11 jury binder. Do you have that, sir?

12 A Yes.

13 Q And that's the Judge's definition of claim terms,  
14 right?

15 A Yes.

16 Q You don't dispute, Dr. Akl, that the Judge's  
17 definition of "cellular network" in this case says  
18 that a cellular network may include messaging  
19 servers, do you?

20 A No.

21 Q In fact, you don't dispute that the Judge's  
22 definition of "cellular network," the one that the  
23 Judge has given to this jury, allows for a messaging  
24 server to be inside the core network of a cellular  
25 network, do you?

1 A No.

2 Q Now, you used the word "essential" a lot  
3 yesterday. Do you remember that, Dr. Akl?

4 A Yes.

5 Q The Judge's definition of "cellular network," it  
6 doesn't include the word "essential," does it?

7 A No, it was the word "core."

8 Q Right. "Essential" is your word, right?

9 A "Essential" is what I believe the word "core"  
10 means.

11 Q That's your opinion of what "core" means, right?

12 A Yes.

13 Q Now, you would agree, Dr. Akl, that a Sprint  
14 subscriber cannot send a text message without a  
15 messaging server, right?

16 A Correct.

17 Q And I'm talking about -- when I'm talking about a  
18 Sprint subscriber and messaging I'm talking about  
19 what is accused in this case and what you're opining  
20 on -- what you're opining on. Is that how you  
21 understood my question?

22 A I'm understanding your question if I take a  
23 messaging server and I break it, a Sprint subscriber  
24 is not going to be able to send a text message or an  
25 MMS message?

1 Q And a Sprint subscriber also won't be able to  
2 receive a text message or an MMS message without a  
3 messaging server, right?

4 A Yes.

5 Q A messaging server you would agree is essential  
6 to sending or receiving an SMS or MMS message, right?

7 A Yes, it is essential to Sprint's messaging  
8 network.

9 Q And it's essential to sending or receiving an SMS  
10 or MMS message, correct, sir?

11 A Yes, it is essential to Sprint's messaging  
12 network.

13 Q You're answering a slightly different question,  
14 and you're entitled to do that, but I would like an  
15 answer to my question, sir. A messaging server is  
16 essential to sending or receiving an SMS or MMS  
17 message, correct?

18 A Yes.

19 Q Now, you talked a lot yesterday, Dr. Akl, about  
20 1999, and we heard a little bit of it today as well.  
21 You would at least agree, wouldn't you, Dr. Akl, that  
22 messaging servers are core network elements in  
23 Sprint's cellular network today?

24 A No, I disagree with that.

25 Q Okay. You don't think they're core network

1 elements today either?

2 A No.

3 Q And is that for the same reasons that you say  
4 they weren't core network elements in 1999?

5 A They are not core network elements in a cellular  
6 network. This is the definition. They may be core  
7 from a business point of view. You wouldn't buy a  
8 phone if it doesn't have texting. I wouldn't buy a  
9 phone if it doesn't have a camera. That doesn't make  
10 it a core network element in a cellular network based  
11 on the construction that the Judge gave us. This is  
12 what we have to go by.

13 Q And my question was is it your opinion -- well,  
14 let me ask it differently. Your opinion is that  
15 messaging servers are not core network elements in  
16 Sprint's core network today and you don't believe  
17 that they were core network elements in '99 either,  
18 right?

19 A You are -- the answer to your question is no, but  
20 you did not use the word "cellular network," and I  
21 would like for the jury to be clear we are talking  
22 about a core network element in a cellular network.

23 Q And you --

24 A That's very important.

25 Q And you don't think Sprint's messaging servers

Dr. Akl - Cross

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1 are core network elements today in a cellular  
2 network, in Sprint's cellular network, and you didn't  
3 think they were core network elements in 1999 either,  
4 correct?

5 A Yes.

6 Q And that's for the very same reasons?

7 A Yes.

8 Q You didn't show this jury yesterday, Dr. Akl, any  
9 Sprint documents, not a one, that use the word  
10 "essential" or "non-essential" to define what is  
11 inside or outside of Sprint's cellular network, did  
12 you?

13 A I don't think so.

14 Q And, in fact, you know, Dr. Akl, that the word  
15 "essential" doesn't appear anywhere in the 870  
16 patent, does it?

17 A I don't remember. I believe the Judge's  
18 instructions for words that are not defined, we go by  
19 the plain and ordinary meaning, and the plain and  
20 ordinary meaning of the word "core" is essential.

21 Q In your opinion?

22 A Yes.

23 Q And I believe you testified yesterday looking at  
24 the patent, that was the very first thing you did in  
25 this engagement, correct?

Dr. Akl - Cross

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1 A Yes, this is what "core" means.

2 Q And you looked at the patent first and you've  
3 looked at it a number of times over the course of the  
4 engagement, correct?

5 A Yes.

6 Q You know it -- you know it pretty well by now,  
7 don't you, sir?

8 A I hope so.

9 Q And you --

10 A Yes.

11 Q And you would agree that the word "essential"  
12 doesn't appear anywhere in the 870 patent, does it,  
13 Dr. Akl?

14 A I will take your word for it.

15 Q You also talked a lot yesterday about core  
16 functionality, right?

17 A Yes.

18 Q The Judge's definition of "cellular network" that  
19 the jury has in its binders and up on its screens, it  
20 doesn't use the phrase "core functionality," does it?

21 A Those words do not appear directly.

22 Q Right.

23 A Correct.

24 Q Instead, it uses the phrase "core network  
25 elements," isn't that right, sir?

1 A Yes.

2 Q And it says that those core network elements may  
3 include messaging servers, right?

4 A Yes.

5 Q And you know that and this jury knows that  
6 because the Judge says the words "and messaging  
7 servers" in his definition of "cellular network,"  
8 right?

9 A Yes.

10 Q You didn't show this jury any Sprint documents  
11 either yesterday or today, sir, that use the phrase  
12 "core functionality" to define what is inside or  
13 outside of the core network of Sprint's cellular  
14 network, did you?

15 A I don't -- I don't think so.

16 Q And, again, Dr. Akl, you know that the 870  
17 patent, the patent that we're here to discuss, the  
18 patent that is in this jury's binders, it doesn't  
19 ever use the phrase "core functionality," does it?

20 A I don't remember if the word "core functionality"  
21 appears next to each other --

22 Q I'm sure --

23 A -- but I don't think so.

24 Q I'm sure your counsel will correct me if they  
25 find it. As you described in your testimony



Dr. Akl - Cross

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1 yesterday -- I think it was at the very beginning,  
2 Dr. Akl -- you published numerous articles on CDMA,  
3 correct?

4 A Yes.

5 Q And you consider yourself to be an expert on  
6 CDMA, correct?

7 A Yes.

8 Q And I believe in the slide you showed yesterday  
9 you actually listed your various publications, if I  
10 recall. Am I right on that?

11 A Yes.

12 Q And among those, you listed ten journal  
13 publications, 35 conference proceedings, two  
14 technical papers, and three book chapters, many of  
15 which are on CDMA, correct, sir?

16 A Yes.

17 Q And in not a single one of those 40 publications,  
18 Dr. Akl, have you ever stated that a CDMA2000  
19 cellular network excludes messaging servers?

20 A I haven't said one way or the other in those  
21 publications.

22 Q And in not a single one of those 40 publications  
23 have you ever stated, Dr. Akl, that the only way that  
24 a messaging server can be a core network element in a  
25 CDMA2000 cellular network is if its functionality is

Dr. Akl - Cross

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1 combined with the functionality of another core  
2 network element, have you?

3 A That's not the focus of the papers, so that  
4 phrase would not be in those papers.

5 Q Right. In fact, that concept isn't in any of  
6 those papers that you've written, correct? Not one  
7 of 40 have you ever stated the position you've told  
8 this jury, correct?

9 A Yes.

10 Q And you would agree, Dr. Akl, that one of this  
11 jury's tasks is to decide whether Sprint's messaging  
12 servers are external to its cellular network, right?

13 A Yes.

14 Q "Cellular network," that's actually the phrase  
15 that's in the 870 patent claims, right?

16 A I'm sorry, could you repeat the question?

17 Q Sure. "Cellular network," that's actually the  
18 phrase that's in the claims of the 870 patent, claims  
19 one, seven, and 113, right, sir?

20 A I'm sorry, the question before it because that  
21 kind of -- this question was kind of -- if you could  
22 repeat the previous question?

23 Q I think we're going to agree on my first one, but  
24 I'll ask it again.

25 A Thank you.

Dr. Akl - Cross

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1 Q Would you agree that one of this jury's tasks is  
2 to decide whether Sprint's messaging servers are  
3 external to its cellular network?

4 A Yes. Okay.

5 Q And "cellular network," those two words, those  
6 are the words that are in the claims of the 870  
7 patent, right, sir?

8 A Yes. Now I'm following. Thank you.

9 Q And "core network," that's the phrase in the  
10 Judge' definition of "cellular network," right?

11 A Yes.

12 Q Okay. So we have the phrase "cellular network,"  
13 we have the phrase "core network" that are in play,  
14 right, sir?

15 A We have the phrase, "cellular network," but we  
16 have a definition for "cellular network." So  
17 whenever we see the term "cellular network" we always  
18 have to adopt this definition. I guess that's why I  
19 was confused, because you made it sound like the two  
20 things are different, but the words "cellular  
21 network" in the claim, always we look at this. So  
22 this is the only thing we look at.

23 Q The definition of "cellular network" that  
24 includes as part of it "core network," correct?

25 A Yes.

Dr. Akl - Cross

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1 Q Now, you showed this jury, Dr. Akl, a lot -- and  
2 I do mean a lot -- of slides yesterday that said the  
3 phrases "Sprint's cellular network" and "core network  
4 elements" and "Sprint's messaging network," right?

5 A Yes.

6 Q And, in fact, you showed them over and over and  
7 over again, right?

8 A Yes.

9 Q And isn't it true, Dr. Akl, that every single  
10 time -- every single time that you showed the jury a  
11 slide yesterday that said "Sprint's cellular network"  
12 or "cell network" those were your graphics that you  
13 prepared with Comcast's counsel, not words in the  
14 actual Sprint documents?

15 A I disagree. There were Sprint documents that I  
16 used for cellular network.

17 Q That wasn't my question. Every single time you  
18 showed the jury a slide that said "Sprint's cellular  
19 network" or "cell network" those were your graphics  
20 that you added to the slides, they weren't the words  
21 in the actual Sprint documents that were being  
22 presented on the slides, correct?

23 A Again, I don't think I understand the question  
24 because what -- the figures that I have of Sprint's  
25 cellular network are Sprint figures, so I'm not sure

1 I understand the nuance of your question.

2 Q I'm not talking about figures; I'm talking about  
3 words. I'm talking about the words on the slides  
4 that you presented to this jury to express your  
5 opinions in this case. That's what I'm talking  
6 about. And my question is every time you showed the  
7 jury a slide that had the words "Sprint's cellular  
8 network" or "cell network" those were your words that  
9 you put on the slides, they weren't words from the  
10 actual Sprint documents that the slide was  
11 discussing, isn't that right, sir?

12 A I don't think I agree with that.

13 Q Okay. You think you could point me to -- in  
14 those slides to where the actual documents that  
15 you're talking about have those phrases in them?

16 A I think so.

17 Q Okay. Well -- and by all means, if you think of  
18 them as you're going through your materials, I'm  
19 happy to discuss one of them with you. Perhaps your  
20 counsel will show you as well.

21 A Okay.

22 Q Every single time you showed the jury a slide  
23 yesterday, Dr. Akl, that said the words "core network  
24 elements" those were your graphics and not the words  
25 in the actual Sprint documents that you were

Dr. Akl - Cross

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1 discussing, correct, sir?

2 A The graphics included Sprint documents, and I  
3 circled in the Sprint documents the elements that are  
4 core network elements in the Sprint document. I  
5 don't believe the words "core network element"  
6 appeared in the Sprint document, but I applied the  
7 Court's instruction and I circled in the Sprint  
8 documents the core network elements.

9 Q And then you put the words "core network  
10 elements" in the slide, correct?

11 A Yes.

12 Q As part of expressing your opinion, as opposed to  
13 words that were in the actual documents, right?

14 (Pause in proceedings.)

15 Q And I'm not trying to trick you.

16 A Right. Right. No, I --

17 Q I want this jury to understand when they saw  
18 slides from you repeatedly yesterday which parts of  
19 the slides were your opinions in this case and which  
20 parts of the slides were words or diagrams from  
21 actual Sprint documents. That's the purpose of my  
22 questioning.

23 A And I think I've made it clear when I was  
24 generating my own figure I said this is my own  
25 figure, when it was a Sprint document it was a Sprint

1 document, and when I circled something in a Sprint  
2 document I said this is a Sprint document and the  
3 highlighting is mine, so I don't think there is  
4 confusion.

5 Q And those slides may or may not go back with this  
6 jury, and I just want it to be clear to the jury when  
7 they're looking at those slides which parts come from  
8 you as part of your opinion, which you're entitled to  
9 render, and which parts are in the actual Sprint  
10 documents. And every time you showed the jury a  
11 slide yesterday that said in blue letters the phrase  
12 "Sprint's messaging network" those were your graphics  
13 and not words that were in the actual Sprint  
14 documents that you were discussing, correct?

15 A No, I disagree. I believe it was a Sprint  
16 document that said "Sprint messaging network," and  
17 there were multiple documents and those were words  
18 from Sprint's document.

19 Q In fact, I think you showed the jury one  
20 document, and you saw it again today from counsel,  
21 that said "messaging network components," and that  
22 was the only document that you showed this jury that  
23 had those words that were actually on the document  
24 from Sprint's file, correct?

25 A No, I disagree. The other document that had the

Dr. Akl - Cross

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1 blue and the green and it said "messaging" --

2 Q You think that document said "Sprint's messaging  
3 network," is that your testimony, sir?

4 (Pause in proceedings.)

5 A The document said "Sprint messaging high level  
6 architecture diagram."

7 Q Thank you.

8 A Yes.

9 Q Not "Sprint's messaging network?" Those are your  
10 words, correct, sir?

11 A Yes, the document said "Sprint's messaging high  
12 level architecture diagram," and then the other  
13 diagram -- the other documents said "messaging  
14 network components." So these are Sprint documents  
15 with those titles.

16 Q Let's look at two of the documents, Dr. Akl, that  
17 you relied upon yesterday and then prepared your  
18 graphics on. I'm going to first start with what has  
19 been admitted as PX-99.

20 (Pause in proceedings.)

21 Q Do you have a copy of that in your many binders,  
22 Dr. Akl, or do you need another one?

23 (Pause in proceedings.)

24 MR. FINKELSON: May I approach, Your Honor?

25 THE WITNESS: I think I have it. Just give



Dr. Akl - Cross

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1 me a second. I can pull it up. I think it's in this  
2 one.

3 MR. FINKELSON: If it's easier to just have  
4 a standalone copy, I can give you that as well.

5 THE WITNESS: Okay, that's fine.

6 MR. FINKELSON: May I approach?

7 THE COURT: Is there a copy on -- in the  
8 computer? All right.

9 BY MR. FINKELSON:

10 Q And I encourage the witness to follow along  
11 whichever way he would like.

12 (Pause in proceedings.)

13 Q Do you recognize this, Dr. Akl, as PX-99?

14 A Yes.

15 Q And this is the actual document from Sprint's  
16 files, correct?

17 A Yes.

18 Q And if the jury wants to see the actual document,  
19 they should look for what is -- goes back to them as  
20 PX-99, right?

21 A Yes, and this is what I had in my slide.

22 Q And this is at page two on your screen of PX-99  
23 and this was what you were referring to earlier as  
24 being entitled "Sprint's Messaging High Level  
25 Architecture Diagram," right, sir?

1 A Yes.

2 Q And this actual Sprint document entitled "Sprint  
3 Messaging High Level Architecture Diagram" includes  
4 elements of the cellular network, correct?

5 A Yes.

6 Q And that includes, for example, the wireless  
7 terminal that are in blue here as subscriber devices,  
8 right, sir?

9 A Yes.

10 Q And this actual Sprint document entitled "Sprint  
11 Messaging High Level Architecture Diagram" includes  
12 in the architecture elements that you, sir, opine are  
13 within the core network of Sprint's cellular network,  
14 such as the SPS and the HLR, right?

15 A Yes, and that's exactly what I said yesterday.

16 Q And the two ovals that you see here that are  
17 using the SPS as a provisioning store, those are the  
18 SMSC and the MMSC, right, Dr. Akl?

19 A Yes.

20 Q And you would agree, wouldn't you, Dr. Akl, that  
21 the SMSC and the MMSC are CDMA network elements?

22 A They are the messaging servers in a CDMA network.

23 Q You would agree that they are -- that the SMSC  
24 and the MMSC are CDMA network elements, correct, sir?

25 A Sure.

Dr. Akl - Cross

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1 Q And the CDMA network is a cellular network,  
2 right?

3 A The CDMA is the interface in Sprint's cellular  
4 network, and the MMSC and the SMSC are the messaging  
5 servers that are used in Sprint's messaging network  
6 that work with Sprint's cellular network, which is  
7 CDMA.

8 Q And, in fact, the SMSC and the MMSC that are  
9 using the SPS as a provisioning store, you would  
10 agree that those are CDMA network elements, right,  
11 Dr. Akl?

12 A No, I wouldn't phrase it that way.

13 Q You wouldn't? Okay.

14 MR. FINKELSON: Could you turn to page ten,  
15 please, Mr. Baird, of this PX-99? And if you could  
16 highlight the definition, please, of SPS?

17 (Pause in proceedings.)

18 BY MR. FINKELSON:

19 Q Do you have that in front of you, Dr. Akl?

20 A Yes.

21 Q This is the definition of "SPS" as used in this  
22 document, PX-99, is it not?

23 A Yes, but you were asking me a different question.  
24 The SPS is the core cellular subscriber database, so  
25 it is what we pointed to as the messaging server

1 query.

2 Q You would agree that the SPS is itself a CDMA  
3 network element, correct, Dr. Akl?

4 A The SPS is the subscriber database in Sprint's  
5 CDMA cellular network, yes.

6 Q And can you read to the jury what PX-99 says the  
7 SPS is and what it's used for?

8 A It says, "Subscriber profile store used by many  
9 CDMA network elements as a provisioning store."

10 Q Now let's look, Dr. Akl, at how the actual Sprint  
11 document PX-99 compares to some of the graphics you  
12 showed, and specifically PD2.66. And, again, my goal  
13 here is just so it's clear to the jury what portions  
14 of your presentation are your graphics versus what is  
15 in the actual document. Do you have up on your  
16 screen a graphic that has a side by side of the  
17 picture that is actually in the actual Sprint  
18 document on the left and then your graphic on the  
19 right, correct?

20 A This is not the first slide that I showed the  
21 jury.

22 Q Absolute --

23 A I want to be clear that --

24 Q And I do too.

25 A -- I started with this and then I removed

1 components, and I walked the jury through the  
2 process.

3 Q And I do too. There is no question that in your  
4 slide deck, the very first time you presented the  
5 document you showed the full diagram. I don't  
6 disagree with that and I wasn't trying to suggest  
7 otherwise. But I do want the jury to know where you  
8 go from there. So I have actually put up an accurate  
9 copy of what you presented as PD2, slide 66, haven't  
10 I?

11 A Yes.

12 Q Okay. And on this slide you put in the title  
13 "Sprint's messaging network?" Those are your words,  
14 correct, sir?

15 A Up here? Yes.

16 Q Okay. As opposed to on the left side in the  
17 actual document where it says "Sprint Messaging High  
18 Level Architecture Diagram," right?

19 A Which are still in the slides, yes.

20 Q Okay. And if you look -- and your graphic on the  
21 right, it removes from the actual document the SPS  
22 that is used for messaging from the center of this  
23 document, correct? That's gone and your graphic  
24 PD2066?

25 A Yes, and I walked the jury through that process.

Dr. Akl - Cross

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1 Q And your graphic also removes the HLR that is  
2 used for messaging, right?

3 A Yes, and I also walked with the jury that I'm  
4 going to remove it before I did.

5 Q And your graphic also removes the phone that is  
6 used for messaging, correct?

7 A Yes, and I also explained that to the jury --

8 Q And you also --

9 A -- before I did it.

10 Q I'm sorry, I didn't mean to interrupt you. And  
11 you also explained to the jury that once you took all  
12 of that stuff out of the actual document, then you  
13 had what you, in your opinion, Dr. Akl, call Sprint's  
14 messaging network, right?

15 A And what Sprint calls a "Sprint Messaging High  
16 Level Architecture Diagram," yes.

17 Q Well, Sprint calls it -- to be fair -- because I  
18 want to be fair to you, I'd ask that you would be  
19 fair to me. What Sprint calls a "High Level  
20 Architecture Diagram" doesn't just include what's in  
21 your graphic, it includes the HLR, it includes the  
22 SPS, and it includes the wireless terminal, correct?

23 A Yes.

24 Q Let's look at another one of the documents that  
25 you shared with the jury on numerous occasions

Dr. Akl - Cross

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1 yesterday. It would be PX-120, Dr. Akl. And, again,  
2 I have a hard copy for you if it makes it easier.  
3 Would you like one, sir?

4 A Sure, just in case.

5 MR. FINKELSON: May I approach, Your Honor?

6 THE COURT: You may.

7 MR. FINKELSON: I'm sorry?

8 THE COURT: Yes.

9 MR. FINKELSON: I don't go unless I hear --

10 THE COURT: I thought --

11 MR. FINKELSON: -- unless I hear those  
12 words.

13 THE COURT: -- I said you may.

14 MR. FINKELSON: Okay.

15 THE COURT: I'm glued to the computer  
16 screen.

17 (Pause in proceedings.)

18 BY MR. FINKELSON:

19 Q Do you recognize what I've handed you, Dr. Akl,  
20 as PX-120?

21 A Yes.

22 Q And if you look at the front page of PX-120, it  
23 states that this document relates to what is called  
24 the 3GAAA-SPS, correct?

25 A Yes.

Dr. Ak1 - Cross

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1 Q And if you look at the front page, which we have  
2 up on the screen, the document is dated March of  
3 2009, correct?

4 A Yes.

5 Q Okay. And you know, Dr. Ak1, that the 3GAAA,  
6 that's not used for messaging at all at Sprint, is  
7 it?

8 (Pause in proceedings.)

9 A No, I think it's used for packet switching for  
10 the internet.

11 Q And not for messaging?

12 A Correct.

13 Q And you also know, Dr. Ak1, that as of March of  
14 2009, the date that is on this document on which you  
15 relied, Sprint's messaging servers, they weren't even  
16 using the SPS at all, were they?

17 A I'm sorry, repeat the question, please.

18 Q As of the date of this document, March 2009,  
19 Sprint's messaging servers were not even using the  
20 SPS at all, were they

21 (Pause in proceedings.)

22 A Sprint -- 2009 -- maybe. I know if -- on page  
23 seven -- if we can go to page seven of this document?

24 Q Sure.

25 A This is the figure that I had in my slides and



Dr. Akl - Cross

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1 this is what I pointed to the jury that the document  
2 said, "Update drawing to include SPS." So the SPS  
3 was being used at some point after that I believe.

4 Q But it was not being used for messaging at Sprint  
5 as of March 2009, correct?

6 A That may be correct. I think the MLDAP was still  
7 being used.

8 Q And I can actually help you perhaps by reference  
9 even to one of your own slides.

10 MR. FINKELSON: If we could put up slide  
11 PD2.158, Mr. Baird?

12 BY MR. FINKELSON:

13 Q Do you recognize that slide, Dr. Akl, as one of  
14 your own?

15 A Yes.

16 Q Okay. And in it you have a column for SPS and  
17 you include certain dates as to when Sprint started  
18 using the SPS, correct?

19 A When the SPS was started being queried in  
20 messaging was in 2010.

21 Q I appreciate the clarification. That's the first  
22 time that the SPS was being used for messaging, 2010,  
23 correct?

24 A Yes.

25 Q Okay. So that would be after the date of the

Dr. Akl - Cross

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1 document PX-120, which is March 2009, right?

2 A Yes.

3 Q Okay.

4 MR. FINKELSON: Let's look on PX-120 if we  
5 could, Mr. Baird, at page seven.

6 (Pause in proceedings.)

7 BY MR. FINKELSON:

8 Q Up on the jury's screen, Dr. Akl, this is the  
9 diagram that appears in the actual Sprint document  
10 PX-120, correct?

11 A Yes.

12 Q And this actual Sprint diagram doesn't say  
13 anywhere the words "cellular network," does it?

14 A It doesn't here. I would have to look through  
15 the whole document, which I don't necessarily want to  
16 do right now.

17 Q Fair enough. And I'll represent to you at least  
18 I can't find it anywhere in the document, but, again,  
19 you have able counsel and if they disagree, I'm sure  
20 they'll tell us. The actual diagram though doesn't  
21 say cellular network, right?

22 A It says "logical network design."

23 Q It doesn't "cellular network," correct?

24 A Yes.

25 Q And this actual Sprint diagram, it doesn't say

1 "core network," correct?

2 A The words "core network" don't appear on this  
3 diagram, yes.

4 Q And they also don't appear anywhere in PX-120?  
5 And, again, and your counsel can differ when they  
6 have another chance to ask you questions. And PX-120  
7 also says nothing anywhere, Dr. Akl, does it, about a  
8 "messaging network?" Those words don't appear  
9 anywhere in PX-120, do they?

10 A Correct.

11 Q Now, let's look at how the actual Sprint document  
12 PX-120 compares to your graphic that you presented.  
13 And, again, to be fair, when you first started with  
14 the jury yesterday you showed this page just as I'm  
15 showing it on the screen, the actual document. You  
16 did that. But then you added your graphics and  
17 that's what I want to look at.

18 MR. FINKELSON: So if you could show us  
19 PD2.63 side by side with this one, Mr. Baird?

20 (Pause in proceedings.)

21 BY MR. FINKELSON:

22 Q Do you see that up on your screen, Dr. Akl? On  
23 the left-hand side, that's the actual Sprint  
24 document, correct?

25 A Yes.

1 Q PX-120. And then on the right-hand side, that is  
2 your graphic, PD-263, right?

3 A Yes.

4 Q And your graphic adds the green boxes, right?

5 A Yes.

6 Q Your graphic adds the words "Sprint cellular  
7 network," right, as part of your opinions?

8 A Yes.

9 Q Your graphic, as part of your opinions, adds the  
10 words "core network elements," right?

11 A Yes.

12 Q Your graphic adds the word "SPS, or the acronym  
13 "SPS," into the document, correct, into the diagram?

14 A Yes.

15 Q And your graphic also adds in the PSTN up on the  
16 right?

17 A Yes, and I explained all that to the jury as I  
18 was doing it.

19 Q And none of that is in the actual document  
20 itself, as you can see by the comparison, correct?

21 A Yes, this is exactly what I walked through with  
22 the jury.

23 Q Let's go to PD2.69. This is what I call your  
24 snow cone slide. At least that's the way it looks to  
25 me. What you've done here on this slide, PD2.69, Dr.

Dr. Akl - Cross

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1 Akl, is you have put your two graphics that we've  
2 just been looking at on top of -- one on top of the  
3 other, right?

4 A Yes.

5 Q These two graphics -- each of these graphics is  
6 your creation, right?

7 A Yes.

8 Q And then the putting of one on top of the other  
9 is also your creation, right?

10 A Yes, I was explaining to the jury that the  
11 messaging network communicates with Sprint's cellular  
12 network.

13 Q And the Sprint -- there's no Sprint document --  
14 to be clear again, just so the jury knows, there's no  
15 Sprint document that looks like PD2.69, is there?

16 A I think the jury understands that I walked them  
17 to the two figures and how we got to this figure. I  
18 would hope so, yes.

19 Q And the two documents that you used that we've  
20 been talking about, PX-99 and PX-120, those two  
21 documents make no reference to each other, do they?

22 A Probably. I mean I probably agree with your  
23 answer.

24 Q Probably they don't make any reference to each  
25 other?

Dr. Akl - Cross

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1 A Yes.

2 Q And the grey lines that come down that form the  
3 snow cone that are on your graphic PD2.69, those are  
4 grey lines that you've drawn, right?

5 A Yes.

6 Q No Sprint document has anything like that?

7 A Yes.

8 Q Let's look, finally, Dr. Akl, at one of the  
9 message flows on which you relied for your  
10 infringement opinion.

11 MR. FINKELSON: Can we look, Mr. Baird, at  
12 PX-99 at page six?

13 (Pause in proceedings.)

14 BY MR. FINKELSON:

15 Q What you have on your screen, that's the actual  
16 PX-99, right, Dr. Akl? That's what the actual Sprint  
17 document looks like, right?

18 A Yes.

19 MR. FINKELSON: And then if we could  
20 compare it side by side, Mr. Baird with PD2.119?

21 BY MR. FINKELSON:

22 Q That's your graphic on the right? That's your  
23 creation, right, Dr. Akl, in explaining your  
24 opinions?

25 A Yes, and I walked through the jury how I've added

Dr. Akl - Cross

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1 this, because we had discussed it before, to remind  
2 them, and we swapped the SPS with the MLDAP because  
3 of the testimony, what's different when we got to the  
4 messaging LDAP. Originally, we used the figure on  
5 the left --

6 Q Okay.

7 A -- so yes.

8 Q And you answered all of my questions in once --  
9 at once, which I -- which I appreciate. You've added  
10 the words "cell network?" Those are your words,  
11 correct? Those aren't in the actual Sprint document?

12 A Yes, on top here.

13 Q Okay. Let me have you --

14 MR. FINKELSON: You can take that down, Mr.  
15 Baird.

16 BY MR. FINKELSON:

17 Q Let's look back to the jury binder if you still  
18 have that in front of you, sir. And, again, at tab  
19 two, the definition of "cellular network." This is  
20 the white binder that you have, Dr. Akl, by your left  
21 hand.

22 (Pause in proceedings.)

23 Q Do you have that, sir?

24 A Yes, thank you.

25 Q Am I correct, Dr. Akl, that it's your opinion

Dr. Akl - Cross

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1 that as of 1999, the word "core" in "core network"  
2 means "a basic essential or enduring part, or the  
3 essential meaning?"

4 A Sure.

5 Q And would you agree with me, Dr. Akl, that the  
6 meaning of "core," as used in "core network elements"  
7 in the Court's definition on the screen, that hasn't  
8 changed since 1999, right?

9 A Sure.

10 Q You expressed the view quite strongly yesterday,  
11 Dr. Akl, that location doesn't matter when  
12 determining whether the messaging server is internal  
13 or external to the cellular network. Do you recall  
14 that testimony?

15 A Yes, physical location. Geography.

16 Q Let's look at -- I'm going to ask you to look at  
17 the document that is DX-198, and I'll bring you up a  
18 copy of that.

19 (Pause in proceedings.)

20 MR. FINKELSON: May I approach, Your Honor?

21 THE COURT: Yes, you may.

22 BY MR. FINKELSON:

23 Q I see you've gotten rid of everything else.

24 A Thank you.

25 Q You've seen DX-198 before, haven't you, Dr. Akl?



1 A I think so.

2 Q You can see this is a Nokia patent, same as the  
3 870 patent was a Nokia patent, correct, sir?

4 A Yes, this is a Nokia patent.

5 Q And this patent dates back to 1999, just as the  
6 870 patent does, correct?

7 A Yes.

8 Q Can you turn, Dr. Akl, to column five of this  
9 Nokia patent, DX-198? And if I could direct your  
10 attention to lines 60 through 62. And we'll put  
11 those up on the screen as well. I'll give you a  
12 moment to find them.

13 (Pause in proceedings.)

14 Q Do you have it, Dr. Akl?

15 A Yes.

16 Q And this patent says, "The multi-media message  
17 service center, MMSC, is a network element, a server,  
18 which can be located, for example, in a cellular  
19 network or in the internet." Have I read that  
20 correctly?

21 A Yes.

22 Q Can you please tell the jury who the inventor is  
23 on this patent, Dr. Akl?

24 A Ms. Aho.

25 Q And that's the very one in the same Ms. Aho who

Dr. Akl - Cross

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1 is the inventor on the 870 patent, correct? Those  
2 are her words?

3 A Yes.

4 Q You can put that document to the side, sir. Now,  
5 you agree, Dr. Akl, that the concept of cellular  
6 networks has been around since at least 1973?

7 A Yes.

8 Q And, in general, a cellular network is a wireless  
9 network distributed over land areas called cells,  
10 right?

11 A Yes.

12 Q You're also familiar with ETSI, am I right, Dr.  
13 Akl?

14 A Yes.

15 Q And ETSI, I said that right when I was presenting  
16 my opening statement to the jury? That's the  
17 European Telecommunications Standards Institute,  
18 right?

19 A Yes.

20 Q And that was the body, the standards body, that  
21 was responsible for GSM and GPRS, right, Dr. Akl?

22 A Yes.

23 Q Do you have a copy of the patent in front of you?  
24 I think it's PX-2.

25 A Yes.

Dr. Akl - Cross

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1 Q And for the benefit of the jury, this is in your  
2 notebook as well. This is the 870 patent.

3 MR. FINKELSON: Mr. Baird, could you put up  
4 figures one and two?

5 (Pause in proceedings.)

6 BY MR. FINKELSON:

7 Q Do you have in front of you figures one and two  
8 of the 870 patent, sir?

9 A Yes.

10 Q And figures one and two of the 870 patent show  
11 the elements of a GSM cellular network with GPRS  
12 services and the oval is labeled "cellular network,"  
13 correct?

14 A Yes.

15 Q And the acronyms that we see in figures one and  
16 figure two, SGSN and GGSN, those are never referenced  
17 by the CDMA2000 standards, are they?

18 A Those letters are used in GSM. CDMA has a  
19 different set of letters for similar components.

20 Q CDMA2000 doesn't use SGSN or GGSN, right, just to  
21 be clear?

22 A No, I believe they use PDSN.

23 Q And you mentioned LTE yesterday. Do you recall  
24 that, sir?

25 A Yes.

Dr. Akl - Cross

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1 Q And that's what's known as 4G technology?

2 A Correct.

3 Q And LTE is not accused by Comcast in this case,  
4 right?

5 (Pause in proceedings.)

6 A I'm not sure what you mean by "LTE is not  
7 accused."

8 Q Okay. Well, let me -- let me --

9 A Yeah.

10 Q I can frame it differently.

11 A Yes.

12 Q And as opposed to Comcast, I'll just talk to your  
13 opinion. Your opinions in this case are directed at  
14 what you've called Sprint's ANSI-41 CDMA2000 cellular  
15 network, correct?

16 (Pause in proceedings.)

17 A I have used those terms, yes.

18 Q And you've offered no infringement in -- you,  
19 Dr. Akl, have offered no infringement opinion in this  
20 case with respect to LTE, right?

21 A With regard to the components that I looked at,  
22 they are not LTE-specific. So I've identified the  
23 messaging servers, the home location registers, the  
24 subscriber databases. Whether these are also used in  
25 LTE or not does not change the opinion that I'm

Dr. Akl - Cross

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1 rendering. The focus is not LTE.

2 Q But you've offered no infringement in this --  
3 opinion in this case with respect to LTE, correct?

4 A I'm not sure I agree with that.

5 Q You think you've offered infringement opinions in  
6 this case against Sprint's LTE network?

7 A I have not focused on LTE-specific components.  
8 That's how I would phrase it. But the messaging  
9 servers are still being used today. If there is a  
10 component in Sprint's CDMA2000 network that may also  
11 be used in LTE, then it would equally apply. But I  
12 have not distinguished LTE from CDMA2000.

13 Q Right. You focused on 3G, Sprint's 3G cellular  
14 network, right?

15 A Yes.

16 Q And I'm not -- again, I'm not trying to trick  
17 you. You have reports in this case that you've put  
18 forth. I'm not trying to trick you. They never  
19 accuse Sprint's LTE network, right?

20 A I'll take your word for it.

21 Q Okay. You've done that a lot. I caution you,  
22 you don't have -- you don't have to do that. But I  
23 think you'll find I'm correct. Let's look, Dr. Akl,  
24 at PX-174.

25 THE COURT: Before we do that, it's 11:10.

Dr. Akl - Cross

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1 Let's take our mid-morning break.

2 MR. FINKELSON: Absolutely, Your Honor.

3 (Jury out, 11:10 a.m.)

4 THE COURT: We'll be in recess for ten  
5 minutes.

6 MR. FINKELSON: Thank you, Your Honor. If  
7 I can just remind the witness that pursuant to the  
8 parties' agreement, discussions during --

9 THE COURT: Yes, you --

10 MR. FINKELSON: -- cross-examine

11 THE COURT: -- can't talk to them.

12 THE WITNESS: I understand.

13 (Recess taken from 11:11 a.m. to 11:27  
14 a.m.)

15 THE COURT: Be seated, everyone. We have a  
16 note from a jury -- not a jury, one juror. We'll  
17 refer to it as Court Exhibit Number 1, and I'm not  
18 sure how we'll answer it. "I am not sure of the verb  
19 being used by the witness expert, Dr. Akl -  
20 pronunciation - 'coury' - as in carrier or 'query,'  
21 as in questioning. Thank you."

22 MR. FINKELSON: I think we'll stipulate  
23 that you can tell the jury -- that juror or the jury,  
24 in their whole presence, that Dr. Akl is using the  
25 word "query." Right?

Dr. Akl - Cross

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1 MR. GOETTLE: Right.

2 THE COURT: Q-U-E-R-Y?

3 MR. GOETTLE: Q-U-E-R-Y, question.

4 MR. FINKELSON: It did get my stomach  
5 moving, Your Honor. Curry would be nice.

6 (Pause in proceedings.)

7 THE COURT: All right.

8 (Pause in proceedings.)

9 THE COURT: I should add quickly that Dr.  
10 Akl should feel good about the fact that that's the  
11 only question the jury sent out.

12 MR. FINKELSON: I was -- I was definitely  
13 hoping it was something a little bit more monumental  
14 like --

15 THE COURT: Yes. Yes.

16 MR. FINKELSON: -- what are we doing here?  
17 They -- yeah, they're clearly not doing it. But the  
18 rest of my examination is still --

19 (Jury in, 11:29 a.m.)

20 THE COURT: Be seated, everyone. We got a  
21 question from one of you, juror number 7. I'll read  
22 the question. "I am not sure of the verb being used  
23 by the witness expert, Dr. Akl - pronunciation -  
24 'coury' - as in carrier or 'query,' as in  
25 questioning." The answer is the word is query, Q-U-

Dr. Akl - Cross

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1 E-R-Y. All right. We'll proceed with the cross-  
2 examination. Michael --

3 MR. FINKELSON: Thank you, Your Honor.  
4 Bless you.

5 THE COURT: -- time it, today's date and  
6 time.

7 MR. FINKELSON: Mr. Baird, would you mind  
8 putting back up on the screen PX-174?

9 BY MR. FINKELSON:

10 Q Dr. Akl, you have PX-174 on your screen. Do you  
11 see that, sir?

12 A Yes.

13 Q And this is one of the documents you talked about  
14 earlier today, as well as yesterday, right?

15 A Yes.

16 Q You don't know who authored this document,  
17 correct?

18 A Not off the top of my head, no.

19 Q Now, you have used the term "voice network"  
20 before, haven't you, Dr. Akl?

21 A "Voice network?" Yes.

22 Q And a voice network, that's not a separate  
23 network from the cellular network, is it?

24 A I don't think I've used that term. I think I --  
25 I mean I don't remember using it. I may have



Dr. Akl - Cross

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1 referred to voice in a cellular network. That would  
2 be the correct way to describe if I -- if I've said  
3 "voice network" before, I don't recall.

4 Q And you did your dissertation on CDMA cellular  
5 networks, correct?

6 A Yes.

7 Q And do you recall, Dr. Akl, that you had your  
8 deposition in this case?

9 A Yes.

10 Q And that was our opportunity to ask you questions  
11 under oath, just as you're under oath here today?

12 A Yes.

13 Q And you did your best to give complete and  
14 truthful testimony during that deposition, which was  
15 on March 23<sup>rd</sup> and March 24<sup>th</sup> of 2016, didn't you, sir?

16 A Yes.

17 THE COURT: Are you going to proceed with  
18 the deposition?

19 MR. FINKELSON: I am, Your Honor.

20 THE COURT: Let me explain to the jury what  
21 a deposition is. In federal court, ladies and  
22 gentlemen, each side can engage in what is called  
23 discovery, and that term means exactly what it  
24 suggests. Each side can "discover" what the other  
25 side's witnesses will say. And there are two ways to

Dr. Akl - Cross

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1 do this. One is by deposition. To schedule a  
2 deposition, the lawyer for one side, in this case,  
3 Sprint, would notify the lawyer for Comcast and say  
4 please produce your expert for deposition. And that  
5 would be done. A deposition is a question and answer  
6 session under oath. The witness is placed under  
7 oath, as Dr. Akl was placed under oath, and the  
8 attorney requesting the deposition then begins the  
9 questioning.

10 The other method of obtaining information  
11 or discovery about the other side's case is referred  
12 to as interrogatories. They're questions. So one  
13 side would serve the other side questions, and the  
14 other side would answer. All considered discovery,  
15 all designed to avoid surprises at trial. You may  
16 proceed.

17 MR. FINKELSON: Thank you, Your Honor.

18 BY MR. FINKELSON:

19 Q Thank you, Your Honor. Dr. Akl, I'm going to ask  
20 Mr. Baird to put up on the screen a page from your  
21 deposition on March 24<sup>th</sup>, 2016, so you can orient  
22 yourself.

23 MR. FINKELSON: Could you put up page 252?

24 BY MR. FINKELSON:

25 Q And I'm showing this page to you first, Dr. Akl,

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1 just so you know where we are in the chain of the --  
2 of the transcript and you and I are on the same page.  
3 If you could look at the very top of the page, you're  
4 being questioned with respect to your dissertation.  
5 Do you see that, sir?

6 A Yes.

7 Q And, indeed, the title of your dissertation makes  
8 reference to CDMA networks, correct?

9 A Yes.

10 MR. FINKELSON: And if we could turn to the  
11 next page of the deposition, Mr. Baird, where the  
12 questioning continues.

13 BY MR. FINKELSON:

14 Q And you were asked about the focus of your  
15 dissertation and what that focus was on.

16 A Yes.

17 Q And you said,

18 Answer: "The focus is on capacity and  
19 throughput, so the end result being you want a better  
20 network. And how do you get to a better network?"  
21 And, again, I think you're talking about the CDMA  
22 cellular network. "You want a better voice network."

23 Do you see that, sir? Is that your  
24 testimony?

25 A He was zooming in and out as you were reading, so

1 I wasn't able to follow.

2 Q I'm going to have him zoom back in just so you  
3 can see it carefully. Do you see the reference in  
4 your testimony, sir, to a voice network?

5 MR. FINKELSON: It's in the next line, Mr.  
6 Baird. No problem.

7 BY MR. FINKELSON:

8 Q "A better voice network." Do you see that, Dr.  
9 Akl?

10 A Yes.

11 Q And that's referring to a voice network that is  
12 part of a CDMA cellular network, right?

13 A Yes. So what I meant there is the voice calling  
14 capability in a cellular network when --

15 Q And you --

16 A -- I'm referring to my dissertation from 20 years  
17 ago -- 16 years ago, sir.

18 Q And you're calling that voice portion of the  
19 cellular network a "voice network," right?

20 A I did in that response.

21 Q Yeah. And you similarly referred to the data  
22 portion of a cellular network in your deposition as a  
23 data network in the very next sentence, right, Dr.

24 Akl?

25 A Yeah, this is with respect to my dissertation, so

Dr. Akl - Cross

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1 the context is different.

2 Q And that's why I showed you the context first,  
3 but the context of your dissertation was CDMA  
4 cellular networks, right?

5 A Yes, that was what my research was on.

6 Q And that's what your reference to data networks  
7 here relates to, right, sir?

8 A Yes, I'm describing my research.

9 Q And you know, Dr. Akl, that the same is true of  
10 the term "messaging network?" It too is sometimes  
11 used to refer to a subset of the cellular network,  
12 right?

13 A I disagree.

14 Q You disagree. Now, we talked earlier today about  
15 your list of publications, all the various papers and  
16 presentations you made. You can't point the jury,  
17 can you, Dr. Akl, to any instance -- any instance,  
18 not one, in one of your publications where you said  
19 that the word "messaging network" refers to a network  
20 outside of the cellular network, can you?

21 A No, and I can tell you why.

22 Q Well, I -- no is the answer I was looking for.  
23 Thank you, sir.

24 THE COURT: But he can explain.

25 BY MR. FINKELSON:

1 Q When I'm writing my research, when I'm doing my  
2 work, the context is important. So here, the Court  
3 has defined the term "cellular network," and so there  
4 is a construction by the Court, and it's a very  
5 specific construction. The cellular network has to  
6 be the phone, the bay station system that  
7 communicates with the phone, and the core network  
8 elements.

9 In what we're doing this week and next  
10 week, that definition is adopted by everybody in all  
11 the analysis. Outside of this courtroom, the term  
12 may be used more loosely. So of course in my papers  
13 that I've published years ago I am not going to be  
14 using the Court's definition that I hadn't seen. So  
15 this is why the question is really irrelevant.

16 Q Could you turn, Dr. Akl, back to the Court's  
17 construction of "cellular network?" It's the one  
18 that's in tab two of the jury's binders.

19 (Pause in proceedings.)

20 Q Do you have that, sir?

21 A Yes, sir.

22 Q The Court's definition of "cellular network," it  
23 doesn't refer to a messaging network, does it, sir?

24 A No.

25 Q "Messaging server" -- "messaging network," Dr.

1 Akl, that's your phrase, correct?

2 A Yes.

3 Q And that's a phrase that prior to this case, you  
4 had never used before in any of the publications, the  
5 papers, the presentations, the book chapters that you  
6 told this jury about in introducing yourself,  
7 correct?

8 A I don't recall making a distinction or using the  
9 term "messaging network" because my focus is on  
10 cellular networks.

11 MR. FINKELSON: Let's go back if we could,  
12 Mr. Baird, to the Exhibit PX-174.

13 BY MR. FINKELSON:

14 Q I think you referred to some of these acronyms  
15 earlier in your testimony today. You've opined in  
16 this case, right, Dr. Akl, that Sprint's messaging  
17 LDAP is internal to Sprint's cellular network,  
18 correct?

19 A Yes.

20 Q Okay. It's part of the cellular network, right?

21 A Yes.

22 Q And this document includes on its list of  
23 components the acronym LDAP, correct, L-D-A-P?

24 A Yes.

25 Q Okay. And this document -- you talked earlier

Dr. Akl - Cross

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1 today about something called a PDR. Do you recall  
2 that testimony?

3 A Yes.

4 Q And I believe you said that the PDR was part of  
5 what you're opining is Sprint's messaging server,  
6 correct?

7 A Yes.

8 Q And what this document says about the PDR -- I  
9 think you highlighted -- your counsel highlighted the  
10 PDR part, but not the actual explanation of what the  
11 PDR is. And this document says that the PDR was  
12 "used on the CDMA network," correct?

13 A It says it's an "Openwave SMS router" -- which  
14 I've used that term -- "that was used on the CDMA  
15 network." I see those words.

16 Q And the CDMA network is the CDMA cellular  
17 network, right, sir?

18 A The cellular network uses CDMA.

19 Q And then if you go the definition of SMSC --  
20 again, you highlighted the acronym for the jury  
21 earlier today, but in terms of the definition of  
22 SMSC, the document says that the SMSC is "in Sprint."  
23 Do you see that as part of the full description  
24 provided for SMSC?

25 A It says, "The vendor for the SMSC in Sprint is



Dr. Akl - Cross

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1   Acision."

2   Q   And you also pointed the jury earlier today to  
3   the acronym MMSC in this document.

4               MR. FINKELSON:  Mr. Baird, would you  
5   highlight that.

6   BY MR. FINKELSON:

7   Q   Now, in the explanation of this MMSC on PX-174 it  
8   refers to it as an "iDEN platform."  Do you see those  
9   words, sir?

10  A   Yes.

11  Q   Okay.  And, Dr. Akl, that's not even the MMSC  
12  that you're offering an opinion on in this case, is  
13  it?

14  A   iDEN is a network that existed separately from  
15  Sprint and that Sprint purchased I believe in 2006  
16  and then went through a process of consolidating what  
17  they can from the iDEN network with what they had and  
18  save costs.

19  Q   And you haven't provided an infringement opinion  
20  in this case regarding the iDEN MMSCs, right, sir?

21  A   I'm not accusing the iDEN network, but to the  
22  extent parts from the iDEN network were incorporated  
23  in Sprint's cellular network, which happened over  
24  different years and there was a conversion we've  
25  walked through the jury the different vendors -- and

1 they went from Comverse to Acision -- then the  
2 components of the messaging server or the messaging  
3 servers that were used in Sprint's messages, in  
4 Sprint's cellular network, regardless where they came  
5 from, would infringe.

6 Q The document refers to an iDEN platform, correct?

7 A Yes, here, it does.

8 Q And you are not providing an infringement opinion  
9 to this jury with respect to the iDEN platform?

10 A Yes, the iDEN network on its own is not something  
11 that is included in infringement.

12 Q Thank you very much. I appreciate that  
13 clarification, sir. Now I want to talk a little bit  
14 about -- go ahead, sir.

15 A Yes. I know you've highlighted something here,  
16 but you haven't asked me on it, and I don't want it  
17 to be confusing to the jury. You highlighted LDAP.  
18 Are we going to get to that?

19 Q I think I asked you about LDAP earlier and I  
20 think I asked the questions I had to ask about that.

21 A I don't recall you did. LDAP is different than  
22 the messaging LDAP, so I don't want confusion. When  
23 I pointed to the subscriber database that was the  
24 messaging LDAP. It was MLdap. LDAP on its own is  
25 the protocol of the database. So I don't want the

1 jury to be confused seeing the word "LDAP" with the  
2 messaging LDAP, which is the database itself. This  
3 is just the name of the protocol.

4 Q Okay. So the messaging LDAP, that's the LDAP  
5 database that's used only for messaging?

6 A The messaging LDAP was one of the subscriber  
7 databases that I pointed to that was a precursor to  
8 the SPS.

9 Q And it was used only for messaging, right?

10 A It was used -- the messaging LDAP and the SPS are  
11 used for messaging, but not only for messaging. They  
12 are also queried when phones need to connect to the  
13 internet.

14 Q And I wasn't asking about the SMS -- the SPS.  
15 I'm just talking about the messaging LDAP. Is it  
16 your testimony to this jury, sir, that the messaging  
17 LDAP is used for things other than messaging at  
18 Sprint?

19 A I don't remember rendering opinions one way or  
20 the other.

21 Q You don't know?

22 A I don't remember. But the messaging LDAP is not  
23 what we see here highlighted as LDAP.

24 Q I --

25 A That's the important issue.

Dr. Akl - Cross

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1 Q And I appreciate that clarification. But your  
2 opinion is that the messaging LDAP, that is a core  
3 network element, in your opinion, of Sprint's  
4 cellular network, right, sir?

5 A Yes, because that's what became the SPS, and even  
6 in your opening you had the SPS as part of Sprint's  
7 core network elements. So that's one thing we agree  
8 upon together.

9 Q Let's see if we can find a point of agreement  
10 with respect to routing. It's your opinion, isn't  
11 it, Dr. Akl, that routing of communications is a  
12 central function of a cellular network, correct?

13 A You have to look at context again, not just  
14 routing in general. In -- whenever I was describing  
15 core network functionality I said the ability to  
16 route a call from a phone to another phone, which is  
17 what the mobile switching center is doing, or to be  
18 able to connect a phone to the internet, which are  
19 what the packet switching nodes were doing. That's  
20 the context of routing.

21 Q And by "packet switching nodes," you're referring  
22 to those PDSN?

23 A Yes.

24 Q Okay. And those are used for surfing the  
25 internet, correct?

Dr. Akl - Cross

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1 A It allows access to packets from the internet  
2 onto the phone, correct. It allows the phone to  
3 connect to outside networks, so the internet in that  
4 case. And the mobile switching centers, for example,  
5 the public switch telephone networks, so these are  
6 the two external networks that we've highlighted.

7 Q And so if a Sprint subscriber is using his or her  
8 phone to surf the web, they're utilizing the PDSN to  
9 do that, correct?

10 A Yes.

11 Q And it's your opinion that the PDSN, that's a  
12 core network element of Sprint's cellular network,  
13 correct?

14 A Yes, and I don't think you disagree. You had it  
15 in your opening too in the figure that you drew to  
16 the jury, so --

17 Q And, actually, it might be a fun way to do this  
18 if you and I just switch seats, but let's keep it  
19 this way if we can, and we'll try to get through the  
20 examination as quickly as we can, sir. Again,  
21 referring to this deposition in this case, you were  
22 under oath. I asked you the question at your  
23 deposition, Dr. Akl,

24 Question: "Would you say that routing of  
25 communications is a central function of a cellular

Dr. Akl - Cross

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1 network?" And your answer was,

2 Answer: "Yes," correct?

3 A Yes.

4 Q And that was truthful testimony, right?

5 A Yes, based on the context that I've explained to  
6 the jury today.

7 Q And in your opinion, Dr. Akl, the function of the  
8 core network of a cellular network is to route  
9 communications between the bay station system and  
10 external networks, right?

11 A Between the phones, really, and the external  
12 networks through the bay station system.

13 MR. GOETTLE: Your Honor, I'm sorry. I  
14 just -- I missed writing down the page. It was up  
15 there so quick. I missed writing down the page  
16 number of that exhibit.

17 MR. FINKELSON: Oh, we'll put it back up.

18 MR. GOETTLE: I'm wondering if I can just  
19 get the page number. Thank you.

20 THE COURT: Well, don't you have the page?  
21 Someone has that page.

22 MR. FINKELSON: I have the page. Counsel  
23 was just asking because he didn't have an opportunity  
24 to write it down, sir.

25 MR. GOETTLE: I have it.

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1 THE COURT: Well, why don't you give it to  
2 him?

3 MR. GOETTLE: He did.

4 MR. FINKELSON: I did.

5 MR. GOETTLE: I have what I need. He told  
6 me.

7 THE COURT: I missed it. Continue.

8 (Pause in proceedings.)

9 BY MR. FINKELSON:

10 Q It's your opinion, correct, Dr. Akl, that the  
11 function of the core network of a cellular network is  
12 to route communications between the bay station  
13 systems and external networks, correct?

14 A Yes. I would go one step further and say it's  
15 really the phones that are connected to the bay  
16 station systems. If you just connect the towers, it  
17 doesn't really get you very far.

18 Q Fair enough. But that's what the core network  
19 does, in your opinion, correct?

20 A Core network -- yes, it connects the phones to  
21 each other and it connects the -- it allows the  
22 phones to connect to the external network. So in my  
23 analogy, it was the operators that say at the  
24 switchboard, the Lily Tomlin, that's the switching  
25 and the lookup. Those are the core essential

1 functionality.

2 Q And it's your testimony that that was the case as  
3 well in 1999, right?

4 A Yes, except it was replaced by computers.

5 Q But you would agree that not every core network  
6 element communicates directly with the bay station  
7 system, correct?

8 A Correct.

9 Q In fact, the HLR is an example? The HLR, which  
10 you've testified is a core network element, it  
11 doesn't communicate directly with the bay station  
12 system, does it?

13 A No, the HLR is the subscriber database, again,  
14 that contains the location of the phone. So there  
15 needs to be a lookup in the HLR to know where the  
16 phone is so you can deliver a call to a phone.

17 Q And, similarly, not every core network element  
18 communicates directly with external networks,  
19 correct?

20 A Correct.

21 Q The HLR, again, it doesn't communicate directly  
22 with external networks, does it?

23 A No, you want the HLR to be as secure as possible  
24 because it contains sensitive subscriber information.

25 Q But in your opinion, the HLR is still a core



Dr. Akl - Cross

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1 network element because it assists or plays a role in  
2 routing of communications between the core network  
3 and external networks, isn't that right, sir?

4 A The HLR is an essential core network element  
5 because you need to do the lookup in the HLR to know  
6 the location of the phone so you can connect those  
7 phones to the external network, yes.

8 Q So the HLR is a core network element because it  
9 assists or plays a role in routing of communications  
10 between the core network and external networks, even  
11 though it doesn't itself communicate directly with  
12 the external networks, right?

13 A You can't have the routing if you don't know what  
14 to route, so the -- by saying "assist" -- it's a  
15 crucial functionality, that lookup, yes.

16 Q Okay. And I asked you about the concept of  
17 routing at your deposition. Do you recall that, sir?

18 A I'm sure you're going to refresh my mind.

19 Q Okay. Well, specifically, I asked you whether  
20 each element in the core network actually itself  
21 needs to route. Do you remember that line of  
22 questions?

23 A No, but if you want to put the transcript, we can  
24 look at it.

25 Q Happy to.

Dr. Akl - Cross

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1 MR. FINKELSON: If we could pull up, Mr.  
2 Baird, page 112 starting at line four?

3 (Pause in proceedings.)

4 BY MR. FINKELSON:

5 Q Do you have that testimony in front of you, Dr.  
6 Akl? That's from your deposition? And take your  
7 time, sir.

8 (Pause in proceedings.)

9 A Yes, I read my answer.

10 Q And in your deposition, Dr. Akl, you said,  
11 Answer: "Each individual element doesn't  
12 necessarily need to actively route, but it assists or  
13 play a role in the routing of communication between  
14 the core network and external networks," correct?  
15 That's the function of a core network element? That  
16 was your testimony, right?

17 A Yes.

18 Q Okay. And isn't it true, Dr. Akl, that Sprint's  
19 messaging server, the ones that you have been  
20 speaking to this jury about, its SMSCs and its MMSCs,  
21 those help with routing communications, don't they,  
22 sir?

23 A No.

24 MR. FINKELSON: Mr. Baird, can we look at  
25 page 120 of Dr. Akl's deposition?

Dr. Akl - Cross

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1 (Pause in proceedings.)

2 BY MR. FINKELSON:

3 Q And I'll try to do this as little as possible,  
4 but if you and I have a disagreement, you don't think  
5 I've fairly characterized what you've said, I'll drop  
6 your testimony on the floor. And then I'll ask you  
7 about it. And what I said to you at your deposition,  
8 Dr. Akl, is,

9 Question: "It's fair to say as a general  
10 matter that Sprint's accused SMSCs and MMSCs help  
11 with routing communications?" Have I read that  
12 question accurately as I posed it to you at your  
13 deposition?

14 A Yes, and --

15 Q And by "accused SMSCs and MMSCs," I was referring  
16 to the SMSCs and MMSCs that you are telling this jury  
17 infringed the 870 patent, right?

18 A Yes, the SMSCs and the MMSCs in this context is  
19 correct, but this is a different question on routing  
20 that we were talking about essential core elements  
21 that do the routing of the phone to the external  
22 network.

23 Q Okay.

24 A So that distinction is important.

25 Q And I appreciate that. But I asked you,

Dr. Akl - Cross

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1           Question: "Is it fair to say as a general  
2 matter that Sprint's accused SMSCs and MMSCs help  
3 with routing communications?" And I got a  
4 straightforward answer. And that answer was,

5           Answer: "Yes, the SMSC and the MMSC in  
6 Sprint's telecommunications system help in routing  
7 communications."

8   A    Yes.

9   Q    That's what you told me, right?

10   A    In the context of as a general matter.

11   Q    And I've shown you the context. It's in your  
12 deposition and it's talking about the SMSCs and MMSCs  
13 that you are asserting infringed the 870 patent,  
14 right, sir?

15   A    Yes.

16   Q    And, in fact, you know, Dr. Akl, that Sprint's  
17 accused messaging servers, its SMSCs and its MMSCs,  
18 actually perform routing, right?

19   A    Routing of what?

20   Q    Routing of communications.

21   A    In what context?

22   Q    In the context that we're talking about here  
23 today and yesterday, the context of Sprint's SMS and  
24 MMS that Comcast is accusing of infringement in this  
25 case and on which you are opining.

Dr. Akl - Cross

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1 A They have the functionality of they receive a  
2 text message and then they forward it. That is not  
3 the routing in the context that we're describing. So  
4 we have to be careful how we use those terms, in a  
5 specific context or generally.

6 Q You would agree, wouldn't you, Dr. Akl, that  
7 forwarding of an SMS or MMS message is an example of  
8 routing communications?

9 A Yes, in a -- in general.

10 Q And you testified earlier today that Sprint's  
11 messaging servers, in fact, at one point in time  
12 included in them something called an SMS router,  
13 right?

14 A Yes.

15 Q And you are aware, Dr. Akl, of what's called the  
16 inter-carrier gateway, right?

17 A Yes.

18 Q And the inter-carrier gateway, that's not inside  
19 of Sprint's cellular network, right?

20 A No.

21 Q It's external to Sprint's cellular network,  
22 correct? Do you want to refer to the picture in the  
23 diagram?

24 A I think it's good.

25 Q Sure.

Dr. Akl - Cross

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1 A Just for the jury's sake, PX-99?

2 MR. FINKELSON: Mr. Baird, could you pull  
3 up PX-99 so Dr. Akl can refer to it?

4 THE WITNESS: So the inter-carrier -- we  
5 have two inter-carrier gateways and we have an inter-  
6 carrier MMS and SMS, so when I was describing earlier  
7 when you have a text message from somebody outside of  
8 Sprint's network coming in it comes through the  
9 inter-carrier gateway to the messaging server. This  
10 is how someone outside of Sprint like from AT&T or  
11 Verizon, T-Mobile, communicate with a subscriber with  
12 Sprint, and, similarly, a subscriber with Sprint can  
13 communicate with someone outside. Yes.

14 BY MR. FINKELSON:

15 Q And the inter-carrier gateway is external to  
16 Sprint's cellular network, right?

17 A Yes.

18 Q And it --

19 A It's not a core network element.

20 Q And, in fact -- and I think you just described  
21 this. It essentially acts as a liaison between  
22 different carriers so say a Sprint subscriber can  
23 communicate with T-Mobile subscriber, right?

24 A That is correct, that's what these are, so we can  
25 have different carriers talk to each other, or send

1 text messages in this case, or MMS messages.

2 Q When I, as a Sprint subscriber, which I'll state  
3 for the sake of the record I'm not -- when I, as a  
4 Sprint subscriber, send an SMS message to a T-Mobile  
5 subscriber, as an example, it is Sprint's SMSC that  
6 sends that SMS message to the external inter-carrier  
7 gateway, correct, Dr. Akl?

8 A Yes.

9 Q It's not Sprint's mobile switching center that  
10 does it, right?

11 A Yes, it goes to the messaging server and it goes  
12 out to the inter-carrier, and it doesn't even go in  
13 Sprint's network.

14 Q Correct. It's not routed by Sprint's mobile  
15 switching center, is it?

16 A No, and that's a good thing. You don't want to  
17 bog the Sprint network. That's the whole point.

18 Q And it's not routed by Sprint's packet switching  
19 node, is it?

20 A Absolutely. You don't want to do that.

21 Q It's routed by the SMSC, correct?

22 A No, the SMSC gets it and gets rid of it.

23 Q Okay. It gets rid of it by sending it along to  
24 the T-Mobile subscriber, correct? And that's -- it's  
25 your testimony to this jury that delivering this

1 message so that it goes to the inter-carrier gateway  
2 so that it can go to the T-Mobile subscriber, that's  
3 not routing communication? Is that your testimony,  
4 sir?

5 A That's not routing in the context of what  
6 essential or core network element means. So going --  
7 we always have to go back to the Court's claim  
8 construction. We have "core network element," and  
9 what does "core" mean? It's "essential." What does  
10 it mean to be "essential?" You're doing the routing  
11 of the phones to the external networks. This is  
12 we're going to complete that call or we're going to  
13 connect to the internet. So there is routing. There  
14 is routing in Sprint's messaging network. There is  
15 routing in the cellular network. But "routing," as a  
16 term, is used just you're moving things around. But  
17 we are focusing on what is essential, and there is  
18 essential routing or switching when you connect those  
19 phones to the external networks. So we want to be  
20 very clear how we use those terms.

21 Q And the way you use the term is that the routing  
22 of communications to external networks is an  
23 essential core network function, right?

24 A The routing of the calls from the phones to the  
25 external networks or the routing of the calls from



1 the phone to each other. So the core network  
2 elements, like the mobile switching center, like the  
3 subscriber databases that are doing the lookup --  
4 that's going back to the analogy, the switchboard.  
5 These are the two functionalities. You want to  
6 connect the call. You need to lookup to be able to  
7 connect the call.

8 Q We're not here talking about calls, are we?

9 A We are talking about a Sprint cellular network.  
10 So core -- calls are a huge part of Sprint's cellular  
11 network.

12 Q Is it your testimony, sir, that the only things  
13 that are in Sprint's core network are those things  
14 that relate to voice telephone calls like in your  
15 Lily Tomlin switching example?

16 A No, I don't believe I ever said that because we  
17 in -- we talk about the mobile switching centers that  
18 connect the call. We also talk about the PDSN, the  
19 packet switching component that allow you to connect  
20 to the internet. So I am including regular calls,  
21 I'm including like packet calls, like voice over IP,  
22 which is what we've moved to, I am including being  
23 able to connect to the internet. Those are the  
24 switching -- the core functionality.

25 Q Okay.

1 A The other stuff are external. Messaging,  
2 voicemail, that's adjunct services.

3 Q So core functionality, it's your testimony that  
4 involves making voice calls and surfing the internet,  
5 but it does not involve sending SMS or MMS messages?

6 A This is based on the Court's construction, based  
7 on the '99 patent, based on the specification, this  
8 is what we're describing, yes.

9 Q Okay. Thank you. I appreciate that. Now,  
10 you've also said, I believe, that another function of  
11 a core network, of a cellular network, is connecting  
12 subscribers within a cellular network, right?

13 A Yes.

14 Q And that's the example of a Sprint to Sprint, as  
15 opposed to Sprint to T-Mobile?

16 A Yes.

17 Q And when a Sprint subscriber sends an SMS  
18 message to another Sprint subscriber that message  
19 goes through Sprint's SMSC, doesn't it?

20 A Yes.

21 Q And without that SMSC, would you agree that I  
22 can't be connected to that other Sprint subscriber so  
23 that she can receive my SMS message?

24 A You cannot send a text message if you take out  
25 the messaging server --

Dr. Akl - Cross

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1 Q And --

2 A -- I agree.

3 Q I didn't mean to cut you off. I thought you were  
4 done with your answer. And the same is true of an  
5 MMS message, correct?

6 A Yes, you would not have a messaging network.  
7 That's exactly -- your messaging network would break.

8 Q Now, switching gears a little bit, Dr. Akl. You  
9 talked yesterday with counsel for Comcast about the  
10 ANSI-41 standard. Do you remember that, sir?

11 A Yes.

12 Q And the ANSI-41 standard, that's interchangeably  
13 referred to as IS41, right?

14 A Yes.

15 Q And a person of ordinary skill in this field that  
16 brings us here would look to cellular standards  
17 documents to understand what "core network" means,  
18 correct?

19 A They may, yes.

20 Q Yeah. And that would have been true in 1999 as  
21 well, right?

22 A Yes.

23 Q And you would agree that a person of ordinary  
24 skill in the art would not use GSM standards when  
25 implementing an IS41 telecommunications system,

Dr. Akl - Cross

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1 right?

2 A Yes.

3 Q Such a person would like to the IS41, also known  
4 as ANSI-41 standards, right?

5 A Yes.

6 Q Okay. Let's take a look at the ANSI standard.  
7 It's the -- it's the big one from yesterday. If you  
8 still have it there, it's DX-3.

9 MR. FINKELSON: And I believe, Your  
10 Honor -- did you admit it into evidence?

11 MR. GOETTLE: I did not and I took it back.  
12 Do you need it?

13 MR. FINKELSON: No. Do you have any  
14 objection to me moving it into evidence during my  
15 examination?

16 MR. GOETTLE: I think it's already on  
17 (indiscernible) motion.

18 MR. FINKELSON: Your Honor, I'd move the  
19 admission of DX-3.

20 THE COURT: There's no objection?

21 MR. GOETTLE: No objection, Your Honor.

22 THE COURT: DX-3 is received.

23 (Defendant's Exhibit 3, document, is  
24 admitted into evidence.)

25 MR. FINKELSON: Thank you, Your Honor.

Dr. Akl - Cross

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1 THE WITNESS: Do you want to give me a copy  
2 just in case?

3 BY MR. FINKELSON:

4 Q I was actually trying to spare you that --

5 A That's fine.

6 Q -- in hopes you still had it, but I will get you  
7 a copy. Just give me one second.

8 (Pause in proceedings.)

9 MR. FINKELSON: May I approach, Your Honor?

10 THE COURT: You may.

11 THE WITNESS: Thank you.

12 (Pause in proceedings.)

13 BY MR. FINKELSON:

14 Q Are you settled? Do you have DX-3?

15 A Yes.

16 Q All of it?

17 A Yes.

18 MR. FINKELSON: Mr. Baird, can you please  
19 turn us to the page that ends with the numbers 867?

20 (Pause in proceedings.)

21 BY MR. FINKELSON:

22 Q Do you see the history of the ANSI-41 standard  
23 listed here, Dr. Akl?

24 A Yes.

25 Q And it actually makes specific reference to a

Dr. Akl - Cross

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1 July 1997 initial ANSI publication, right?

2 A Yes.

3 Q And that's the American National Standards  
4 Institute, right?

5 A Yes.

6 Q Now, yesterday, I believe you also said that this  
7 ANSI-41 standard was not a recommendation, right?

8 A I believe I said it did not recommend, with  
9 respect to the messaging server, if it's inside or  
10 outside.

11 Q You actually discussed with the jury portions of  
12 what is found in this large document at chapter one,  
13 which is entitled "Functional Overview," right?

14 A Yes.

15 Q Okay.

16 MR. FINKELSON: Can you please highlight or  
17 bring up, Mr. Baird, the page ended in 862?

18 BY MR. FINKELSON:

19 Q And there, you see chapter one, "Functional  
20 Overview," right, Dr. Akl?

21 A Yes.

22 MR. FINKELSON: And, Mr. Baird, could you  
23 now please turn to the page ending in 866? Sorry to  
24 make you jump around. And if you could highlight  
25 right there, that would be perfect. On the first

Dr. Akl - Cross

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1 line. Right about it, actually.

2 BY MR. FINKELSON:

3 Q And here, in DX-3, Dr. Akl, which is the ANSI-41  
4 standard, it says, "The recommendations included in  
5 this series are," and then it makes reference to  
6 chapter one, correct?

7 A Yes.

8 Q I'd like to show you --

9 MR. FINKELSON: You can take that down.

10 BY MR. FINKELSON:

11 Q I'd like to show you another document that I  
12 don't believe you saw yesterday, and it's been marked  
13 as DX-4.

14 (Pause in proceedings.)

15 MR. FINKELSON: Your Honor, DX-4 has not  
16 yet been admitted into evidence, but I would move it  
17 into evidence if you have no objection.

18 MR. GOETTLE: I don't even know what it is.

19 MR. FINKELSON: Sure.

20 (Pause in proceedings.)

21 MR. GOETTLE: Your Honor, I'd like to stick  
22 to our plan of not moving evidence in during cross.

23 THE COURT: Well, we --

24 MR. FINKELSON: That's fine. We can --

25 THE COURT: -- sort of departed --

Dr. Akl - Cross

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1 MR. GOETTLE: We just don't like doing this  
2 on the fly and not having a chance to --

3 MR. FINKELSON: That's fine. I didn't mean  
4 for that at all.

5 MR. GOETTLE: Okay.

6 MR. FINKELSON: We're happy to -- I'll use  
7 it with the witness just for purposes of cross-  
8 examination, Your Honor, and --

9 THE COURT: Fine.

10 MR. FINKELSON: -- then we'll move it into  
11 evidence in our case in chief.

12 THE COURT: Fine. Now what we're talking  
13 about is whether a defendant cross-examining the  
14 plaintiff's witness can move documents into evidence  
15 in the -- as has been done, or whether the defendant  
16 should wait until the plaintiff rests and the  
17 defendant begins its case. It's all technical, but  
18 that is what's going on now. And I'm flexible on the  
19 issue, but the way we're going to approach this from  
20 now on, in cross-examination, you may refer to  
21 documents, but you may not move them into evidence.

22 MR. FINKELSON: Understood, Your Honor. As  
23 I said, we'll wait and so move during our --

24 (Pause in proceedings.)

25 MR. GOETTLE: Counsel, do you have any



Dr. Akl - Cross

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1 objection to me putting the first page of it up on  
2 the screen as I present it to the witness?

3 MR. GOETTLE: No.

4 BY MR. FINKELSON:

5 Q Dr. Akl, I'm going to bring you a copy of DX-4.

6 MR. FINKELSON: Your Honor, may I approach?

7 THE COURT: Yes.

8 BY MR. FINKELSON:

9 Q And I have to take this back because it's  
10 (indiscernible).

11 A Thank you.

12 Q Dr. Akl, you recognize DX-4, correct?

13 A Yes.

14 Q And this is another CDMA2000 standards document?

15 A Yes.

16 Q It's entitled "Network Reference Model for  
17 CDMA2000 Spread Spectrum Systems," right?

18 A Yes.

19 MR. FINKELSON: Mr. Baird, could you please  
20 take those two -- the page ending in 821?

21 BY MR. FINKELSON:

22 Q 821 is where we're heading, Dr. Akl, and it's  
23 going to show up on your screen as well. Do you see  
24 the section, Dr. Akl, entitled "Purpose and Scope?"

25 A Yes.

Dr. Akl - Cross

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1 Q And it says that the purpose and scope of this  
2 CDMA2000 standards document --

3 MR. GOETTLE: Sorry to interrupt. Your  
4 Honor -- you have a page up. I mean if we're going  
5 to do that and it's okay, I'll do it in my case,  
6 but --

7 MR. FINKELSON: Sorry, what's the  
8 objection?

9 MR. GOETTLE: You have the whole page up  
10 instead of just the snippet that you're crossing  
11 with, right?

12 MR. FINKELSON: It was faded into the  
13 background, so I was just -- I was focused on this,  
14 but --

15 MR. GOETTLE: I know.

16 MR. FINKELSON: -- I'm happy to show the  
17 whole --

18 MR. GOETTLE: I know you didn't do it on  
19 purpose, but --

20 MR. FINKELSON: Fair enough. You have --  
21 you have no objection to me showing him the specific  
22 portion I'm asking about, do you?

23 MR. GOETTLE: I think that's what we were  
24 supposed to be doing.

25 THE COURT: Yes, that's --

Dr. Akl - Cross

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1 MR. FINKELSON: Understood. Mr. Baird,  
2 would you --

3 THE COURT: -- the way we can do it.

4 MR. FINKELSON: -- please put --

5 THE COURT: That's the way we'll proceed  
6 from now on.

7 MR. FINKELSON: And, Your Honor, I was not  
8 intending to do it any different way.

9 THE COURT: I understand.

10 MR. FINKELSON: So just the --

11 (Pause in proceedings.)

12 BY MR. FINKELSON:

13 Q All right, with much (indiscernible), Dr. Akl,  
14 "Purpose and Scope" in this CDMA2000 standards  
15 document, do you see that in front of you, sir?

16 A Yes.

17 Q And it says, "This document recommends the basic  
18 3G52 wireless network reference model," correct?

19 A Yes.

20 Q Okay. Let's go back to the document you were  
21 talking about --

22 MR. FINKELSON: And you can take that down.

23 BY MR. FINKELSON:

24 Q -- earlier today at the end of your testimony  
25 when you were talking about the analysis you did with

Dr. Akl - Cross

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1 respect to the number of steps that you believe are  
2 required to send an SMS message or an MMS message.  
3 Do you recall that, sir? And I think it's PX-99.

4 (Pause in proceedings.)

5 MR. FINKELSON: And, actually, Mr. Baird,  
6 if you could just take us to the very first of those  
7 diagrams I think on page three? That's perfect.

8 BY MR. FINKELSON:

9 Q I just wanted to show you the first one just to  
10 orient you, Dr. Akl, but I'm correct, right, that for  
11 your opinions regarding the number of steps you  
12 relied on this document PX-99, right?

13 A Yes.

14 Q And your opinions regarding the number of steps  
15 were to assess the role that you think the 870 patent  
16 plays in Sprint's provision of messaging services,  
17 right?

18 A Yes, as a result of conversation that I had with  
19 the damages expert, Ms. Riley.

20 Q Ms. Riley asked you to do a particular analysis  
21 and you did it?

22 A Ms. Riley asked me from a technical point of view  
23 to look and provide her technical analysis that then  
24 she can use to crunch the numbers.

25 Q And that's a much longer way of saying exactly

Dr. Akl - Cross

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1 what I was trying to ask you. And then you conveyed  
2 that information to Ms. Riley for her use, correct?

3 A Yes.

4 Q And as part of your analysis -- and I didn't hear  
5 it today and I may just have missed it. But as part  
6 of the analysis, you identified certain steps that  
7 you called primary, correct?

8 A I don't think I used the word "primary" yesterday  
9 or today.

10 Q Correct, you didn't. And I did want to make sure  
11 I didn't mishear it. You didn't use it yesterday or  
12 today, but you did use it in the course of rendering  
13 you opinions in your expert reports in this case,  
14 correct?

15 A Yes.

16 Q Is there a reason you didn't use it in front of  
17 the jury?

18 A No, I didn't think it was necessary.

19 Q You labeled certain steps as primary steps as  
20 part of formulating this opinion for Ms. Riley's  
21 usage, right?

22 A In my report, you mean?

23 Q Yes. And you identified 12 steps if I'm correct,  
24 right?

25 A Yes.

Dr. Akl - Cross

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1 Q And those are the very same 12 what you call  
2 primary steps that you identified for the jury  
3 earlier today, correct, sir?

4 A Yes. Again, I didn't necessarily use the word  
5 "primary," but we looked at the call flow diagram  
6 that is a Sprint document and I counted the  
7 infringing steps.

8 Q And you counted 12 of them? You counted 12 total  
9 steps?

10 A Depending on which one we were looking at.

11 Q Fair enough. In your opinion, all of the steps  
12 that you have called primary and that you've  
13 identified for this jury, all of those steps are  
14 equally important to messaging, correct?

15 A So two things. If we can drop the word "primary"  
16 because, again, that's not a word that I've used in  
17 my testimony yesterday or today? I put equal weight  
18 on the steps, and even the ones that were not shown  
19 like the communication -- there were two steps inside  
20 the message -- the subscriber databases. I didn't  
21 even count those. But I didn't put more weight to  
22 more steps than others. And then we looked at the  
23 different scenarios and my understanding is Ms. Riley  
24 took the most conservative number out of all the  
25 different scenarios and that's the one that she used.

Dr. Akl - Cross

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1 Q So all of the steps that you've identified, you  
2 weighted them equally, correct?

3 A Yes.

4 Q And in your view, that's because they're equally  
5 important to messaging, right?

6 A I did not want to bias one step versus another  
7 and then go through why is this more important or  
8 less important. I think it's easier just looking at  
9 Sprint's document. They did not differentiate and I  
10 did not make that distinction.

11 Q But you did omit from your count of steps certain  
12 what you called in at least your expert report in  
13 this case sub-steps, right?

14 A I did not omit based on this document. So I  
15 looked at this specific document and I counted what's  
16 on this document.

17 Q But you did identify in the course of rendering  
18 your opinions in this case several what you called  
19 sub-steps that are not shown in this document, right?

20 A Not yesterday or today.

21 Q In the course of rendering your opinions in this  
22 case?

23 A Yes.

24 Q And is there a reason you didn't use the  
25 terminology sub-steps with this jury even though you

1 used them in the course of rendering your expert  
2 reports in this case?

3 A It was not necessary. Looking at this document,  
4 there are no primary and sub-steps and secondary,  
5 so --

6 Q In fact, right, none of -- none of these diagrams  
7 that are in PX-99 use the word "sub-step" or "primary  
8 step," do they?

9 A That's correct.

10 Q Okay. In the course of rendering your expert  
11 reports at least you came up with those labels  
12 yourself, right?

13 A When I was doing the analysis and doing the  
14 expert report, for a specific context I wanted to  
15 make a distinction. That distinction wasn't  
16 necessary for the information that I wanted to relay  
17 to the jury.

18 Q But just to be fair, the specific context in  
19 which you related in your expert report is the  
20 context of this case, right?

21 A Yes.

22 Q You would agree, wouldn't you, Dr. Ak1, that in  
23 sending SMS or MMS messages, Sprint can't send those  
24 messages without the mobile switching center either?

25 A The mobile switching center has to eventually



1 connect to the phone and it does for calls, for  
2 everything really.

3 Q Right, including messaging, correct?

4 A Yes.

5 Q And in sending an SMS or MMS message, Sprint  
6 can't do that without the bay station system, the  
7 towers, right? It can't do it without the bay  
8 station system?

9 A Yes. So you need the infrastructure, which you  
10 do for a -- for a call.

11 Q And it can't --

12 A That's correct.

13 Q Sorry, I thought you were done. And it also --  
14 in sending an SMS or MMS message, Sprint can't do  
15 that without what's called the radio access network,  
16 right?

17 A Yes, those are steps that are done regardless of  
18 what you're doing. There is signaling and control,  
19 if you recall in my introduction, that have to take  
20 place for the phone to communicate with the antennas  
21 and the cell phone tower and the bay station  
22 controller, and then it goes to the mobile switching  
23 center, that is correct.

24 Q And in sending SMS or MMS messages, Sprint can't  
25 do that without the communication between the radio

Dr. Akl - Cross

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1 access network and the switch, correct?

2 A Yes.

3 Q And in sending SMS or MMS messages, Sprint can't  
4 do so without communications between the switch and  
5 the messaging server, right?

6 A Yes, there are a lot of those routine steps that  
7 have to take place just because you have a cellular  
8 network. In order to have a wireless mobile phone  
9 that's going to connect, you need to be able to talk  
10 to the antennas, yes.

11 Q And you just used the term "routine steps" and  
12 you didn't include any of those routine steps in your  
13 count of steps that you presented to the jury here  
14 today, right?

15 A That is correct.

16 Q Now, you were here, Dr. Akl, for Comcast's  
17 opening statement on Wednesday? I think I saw you in  
18 the back, correct?

19 A Yes.

20 Q And you heard Comcast counsel talk over and over  
21 again about speed? Do you remember that?

22 A Yes.

23 Q Speed is at the core of this patent. That was  
24 the very first set of words that you heard from  
25 Comcast counsel, and you heard that as well, right,

Dr. Ak1 - Cross

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1 Dr. Ak1?

2 A Yes.

3 Q And as we've talked about, you've reviewed the  
4 870 patent over and over in the course of forming  
5 your opinions in this case, haven't you?

6 A I have.

7 Q And that's the 870 patent that is behind tab one  
8 of this jury's binders, and it's in front of you  
9 under that pile. I'll give you a second to get to  
10 it.

11 A Yes.

12 Q It's 23 pages long (indiscernible), Dr. Ak1?

13 A Yes.

14 Q And you know, don't you, that nowhere, not once,  
15 in the 23 pages of the 870 patent does the word  
16 "speed" ever show up?

17 A Actually, I think the word "expedient" shows up,  
18 which is what I have in my slide, which means  
19 "speed," but yes.

20 Q No, the word "speed" never shows up, does it?

21 (Pause in proceedings.)

22 A One second.

23 (Pause in proceedings.)

24 A The word is "expedient," yes.

25 Q The word -- the word "speed" --

Dr. Akl - Redirect

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1 A Yes.

2 Q -- never shows up, correct?

3 A Yes. Yes. We have the word "expedient," which  
4 means "speed."

5 Q And the word "speedier" never shows up, the word  
6 "fast" never shows up, the word "faster" never shows  
7 up, the word "quick" never shows up, "quicker" never  
8 shows up, right?

9 A Yes.

10 Q Thank you. I have no further questions, Dr. Akl.  
11 (Pause in proceedings.)

12 MR. GOETTLE: May I proceed, Your Honor?

13 THE COURT: You may.

14 REDIRECT EXAMINATION

15 BY MR. GOETTLE:

16 Q Dr. Akl, you were asked -- you were asked whether  
17 you could send an SMS message without a messaging  
18 server. Do you recall that?

19 A Yes.

20 Q What was your answer?

21 A No.

22 Q Why not?

23 A Because you need the two functionalities of the  
24 messaging server. You need the ability to be able to  
25 store and forward, and you need the ability to do the

1 query. So the messaging server is important to  
2 receive the message and to do the query.

3 Q Is the same true for both sending and receiving  
4 SMS messages and sending and receiving MMS messages?

5 A Yes.

6 Q Okay. If you don't have a messaging server at  
7 all -- at all in Sprint's network, does the cellular  
8 network work?

9 A Yes, the cellular network is completely fine.  
10 Nothing breaks in the cellular network. You can make  
11 calls and you can surf the internet.

12 Q When did Sprint first have a cellular network?

13 A In 1996.

14 Q Did that network in 1996 include any messaging at  
15 all?

16 A No.

17 Q Did Sprint's cellular network in 1996 work?

18 A Yes. That was actually -- I had a Sprint phone  
19 back then.

20 Q Do you recall during the cross-examination that  
21 you were asked about whether you had shown the jury a  
22 single document that used the word "core" or used the  
23 word "core network?"

24 A I remember the question.

25 Q And what was your answer?

Dr. Akl - Redirect

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1 A The answer -- I said I don't think so, no.

2 Q Why not?

3 A Because the standards don't force you in terms of  
4 what needs to be inside or outside or what needs to  
5 be core or not. So the jury is deciding based on  
6 this patent is the messaging server internal or  
7 external? And another way of phrasing that, the jury  
8 is deciding is the messaging server a core network  
9 element or not? And the standards make  
10 recommendations. And you saw -- I didn't get a  
11 chance to rebut because I'm only supposed to answer  
12 yes or no -- when he was putting a lot of the CDMA  
13 documents and it uses the word "recommends." What I  
14 was answering is yes, the word "recommends" are  
15 there. It recommends functionality. It does not  
16 recommend location. It does not recommend internal  
17 or external. There is no document that tells you  
18 what is -- what has to be inside the core network.

19 Q So -- okay. So and then --

20 MR. GOETTLE: Could we put up DX-3, which  
21 is already in evidence, Your Honor?

22 BY MR. GOETTLE:

23 Q Is this one of the documents that counsel for  
24 Sprint showed to you?

25 A Yes.

Dr. Akl - Redirect

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1 Q And this is one of the CDMA documents you were  
2 just referring to?

3 A Yes.

4 Q Okay. And this document, does this say  
5 anything -- well, I don't remember where it is, but  
6 is this one of the documents where the word  
7 "recommends" was included?

8 A Yeah, I think he went to a page in it that said,  
9 you know, chapters one, two, and three, and the  
10 heading right before it said "recommends." I'm not  
11 disagreeing that there are recommendations of  
12 functionality. That's the figure that I had showed  
13 the jury yesterday. The issue is there is no  
14 recommendation to have it inside or outside, and  
15 that's what I believe Sprint's counsel made in their  
16 opening. He said the evidence is going to show the  
17 standard recommends that it's inside, and that's not  
18 correct.

19 Q So -- and did the jury see this during -- this  
20 document during your testimony yesterday?

21 A Yes.

22 Q Okay.

23 MR. GOETTLE: Can we go to the page -- I  
24 want to say it was 1-27.

25 THE WITNESS: Or 24.

Dr. Akl - Redirect

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1 MR. GOETTLE: It may have been 1-24.

2 (Pause in proceedings.)

3 MR. GOETTLE: Can we blow up -- can we just  
4 blow it up, the heading of -- next to five down  
5 through the bottom of the figure, including figure  
6 two? Thank you.

7 BY MR. GOETTLE:

8 Q Dr. Akl, did you show this figure to the jury  
9 yesterday?

10 A Yes.

11 Q Does this contain any recommendation -- well,  
12 first of all, what component in this -- what box in  
13 this figure has the functionality of storing and  
14 forwarding messages?

15 A The MC has the functionality of storing and  
16 forwarding messages.

17 Q Okay. And based on what you've just seen on the  
18 picture right now, do you -- can you tell one way or  
19 the other whether the standard is recommending that  
20 that MC, having that storing and functioning --  
21 storing and forwarding functionality, is part of a  
22 cellular network? Is there a recommendation?

23 A No.

24 Q What does it say?

25 A The -- it says at the top, it says, "Figure two



1 presents functional entities and the associated  
2 reference points that may logically -- may logically  
3 comprise a cellular network." So, again, this is  
4 consistent with the Court's construction for cellular  
5 network, "may." And we are looking at the different  
6 components, and the jury is going to decide is it  
7 core or not? That's why we're here, in a sense. The  
8 standards don't force you one way or the other, they  
9 don't recommend that it be internal. And looking at  
10 all the documents and the analysis that I did,  
11 looking at the invention, you don't want it to be  
12 inside. In fact, the recommendation is to have it  
13 external. And, again, that's not physically  
14 external. You know, Sprint's network covers the  
15 entire U.S. I'm not going to put the messaging  
16 server in Canada to be external. It means its  
17 functionality, it's -- external is not a core network  
18 element. That's what that means.

19 Q Actually, just stepping back to make sure there's  
20 no confusion, what is the correlation between what  
21 we're hearing CDMA network, or CDMA, versus cellular  
22 network? Are they -- how do those fit together, if  
23 they fit together?

24 A Yes. So the air interface -- and that sounds  
25 very complicated. If you put -- one of the slides,

Dr. Akl - Redirect

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1 like my intro slides on background of the cellular --

2 Q Would you like us to put it up?

3 A Yes, please, if we can.

4 MR. GOETTLE: Can you put up Plaintiff's  
5 Demonstratives Number 2, the slide presentation we  
6 were using of Dr. Akl's?

7 (Pause in proceedings.)

8 THE WITNESS: So the -- yeah. Just like  
9 the -- the first slide after when I said section one,  
10 background, would be -- would be sufficient. I have  
11 it as slide ten, but it may be different. Yeah, the  
12 one right after this one.

13 So the hardest part over a lot of the  
14 innovation we see between the different networks and  
15 how they compete is this part with regard to  
16 cellular. So it's how the phone communicates with  
17 the tower. This is what we call the radio interface.  
18 And going back to the Court's construction of a  
19 cellular network, there are three components. You  
20 need the phone, you need the bay station systems, and  
21 you need the core network. So when reference to  
22 CDMA, which stands for code division multiple access,  
23 it's referring to how do you have all these phones  
24 here, the hundreds of phones, communicate with the  
25 tower?

1           So this aspect for this case, the  
2       communication between the phone and the tower isn't  
3       really at issue. But that's what makes it CDMA  
4       because you want to have all these different users  
5       communicate with an antenna. And you have to use a  
6       channel. The channel is the air. So the way you can  
7       do it, you can either divide the channel into  
8       frequencies, like your radio. You have different  
9       channels on you radio and you tune in to a specific  
10      frequency. That is FDMA, which is frequency division  
11      multiple access. You can have different time slots.  
12      This is what GSM uses, for example. You divide the  
13      channel into channels and then you have little slices  
14      of time that you assign to each user. This is time  
15      division multiple access, which is TDMA.

16           CDMA is code division multiple access, so  
17      you assign different codes for different users, and  
18      they all transmit at the same time. And it sounds  
19      crazy. By using the codes, you can differentiate  
20      between one user and another. And the description  
21      that I just gave you is the first lecture that I give  
22      my seniors in engineering when they take my class,  
23      Intro to Wireless Communication. We talk about the  
24      different methods of the phone communication.

25           When we talk about 2G we have GSM, we have

1 that time division, frequency division. CDMA is code  
2 division. When we look at LTE with 4G they use a  
3 combination. It's very complicated, but you have  
4 these very narrow frequency divisions called OFDM.  
5 None of that is really the issue. We're not arguing  
6 how does the phone talk with the tower. But that's  
7 what CDMA is. And so when a carrier uses a specific  
8 air interface it's not uncommon to refer to their  
9 network by their air interface. So CDMA is the air  
10 interface in Sprint, and so it's common to say, you  
11 know, the CDMA network because that's the wireless  
12 part. And with AT&T, we would say it's, you know,  
13 the TDMA. And now with LTE, we can say it's the  
14 OFDM. But that's the air interface. But here, we  
15 have to go back to -- we have to be very precise. We  
16 are talking about Sprint's cellular network and we  
17 look at the phone, the tower, and the core network  
18 elements, and in that context we are classifying what  
19 a cellular network is.

20 So this is the very long answer to why does  
21 CDMA appear in so many documents? What's its role?  
22 Why is it important? Because it's what makes the  
23 phones -- the code division is what makes the phone  
24 talk with the antennas. That's what Qualcomm came up  
25 with.

1 Q So with what Qualcomm came up with called CDMA,  
2 is that used after you get the signal to the tower  
3 and onto a wire going out to the core network and  
4 other networks? Is CDMA technology used on those  
5 wires?

6 A No. So we would still look at the standard  
7 that's describing it, but the CDMA part is only here.  
8 That's the code division multiple access, how we have  
9 all these phones with different codes talking at the  
10 same time. And the analogy that I give my students  
11 to understand it is frequency division, one person  
12 talks, you have different channels. Time division,  
13 we can't talk at the same time. I'm talking, you're  
14 listening, you've raised your hand, then you can  
15 talk. Code division, we're all in a room, everybody  
16 is talking at the same time, but each is talking in a  
17 different language. So two people are talking in  
18 English, two people are talking in Spanish. You  
19 cannot hear the other person in the background, but  
20 they don't interfere with each other and you  
21 understand the conversation. But this is the air  
22 interface. That's what CDMA is in a nutshell.

23 MR. GOETTLE: Can you go to -- can you flip  
24 to slide -- I think that says 53.

25 THE COURT: I want you to be concerned

1 about a logical breaking point.

2 MR. GOETTLE: We can break whenever you  
3 want, Your Honor.

4 THE COURT: It's 12:35.

5 MR. GOETTLE: Now is --

6 THE COURT: Is this a good --

7 MR. GOETTLE: Now is fine.

8 THE COURT: -- good time?

9 MR. GOETTLE: Yes, sir.

10 THE COURT: All right. Let's recess for  
11 lunch for an hour. I'll give you my -- what will  
12 become my usual instructions noontime and day-in.  
13 You know more about the case now. You might be  
14 tempted to talk about the case among yourselves. Do  
15 not. And do not talk to anyone else about the case.  
16 I remind you about my instructions concerning  
17 communications with the lawyers, the witnesses, and  
18 the other people in the courtroom. Have no contact  
19 with them at all. They are instructed to have no  
20 contact with you. They're not being rude. I'll save  
21 my radio, television, and newspaper comments for the  
22 day in. And with that, we're in recess for an hour.  
23 Take your books and your binders with you.

24 (Jury out, 12:34 p.m.)

25 THE COURT: You may be seated, everybody.

1 You may step down, Doctor.

2 THE WITNESS: Thank you, Your Honor.

3 THE COURT: Is there anything we have to  
4 address?

5 MR. GOETTLE: Not from Comcast, Your Honor.

6 MR. FINKELSON: Not for Sprint, Your Honor.

7 THE COURT: Something occurred to me. It's  
8 something we talk about in every case. I don't know  
9 how you're going to do it in this case. Exhibits  
10 during jury deliberations, have you given any thought  
11 to that?

12 MR. FINKELSON: Yes.

13 THE COURT: Are you planning on giving  
14 hardcopy --

15 MR. GOETTLE: Yes, Your Honor.

16 MR. FINKELSON: Yes, Your Honor.

17 THE COURT: -- of every exhibit?

18 MR. GOETTLE: Of the admitted exhibits,  
19 yes, Your Honor.

20 THE COURT: What about the three volumes?

21 MR. GOETTLE: Those are admitted. That was  
22 my -- whether -- I don't have any high hopes that the  
23 jury will actually go through them, but I think if  
24 they're, the jury should have access to it.

25 MR. FINKELSON: Well, just to be clear, the

1 documents in them are admitted, not the binders  
2 themselves.

3 MR. GOETTLE: Oh, the format of how we get  
4 them to the --

5 THE COURT: Oh, no, wait a minute. No.  
6 Are you talking about whether it goes out in a binder  
7 or loose papers?

8 MR. FINKELSON: I was just talking about  
9 the exhibits, Your Honor, versus in a binder that is  
10 entitled "Support for Dr. Robert Akl." If you --

11 THE COURT: Oh.

12 MR. FINKELSON: If Your Honor prefers  
13 binders that --

14 THE COURT: (Indiscernible) Dr. Akl  
15 (indiscernible).

16 MR. FINKELSON: That just seems -- that  
17 just seems a little bit --

18 THE COURT: I haven't seen that. Is that  
19 what it says?

20 MR. FINKELSON: Yes.

21 THE COURT: That will not go out.

22 MR. GOETTLE: Oh, I -- sorry, I apologize  
23 for that. Those labels were just for us to know  
24 which binder. I wasn't thinking about that. I never  
25 intended the jury to see the front cover --



1 MR. FINKELSON: No.

2 MR. GOETTLE: -- and I don't think they  
3 did.

4 THE COURT: Will we -- I don't know how  
5 many exhibits we'll have, but -- will we need  
6 something like a front-end loader to move the  
7 exhibits?

8 MR. GOETTLE: No, Your Honor, we have -- I  
9 mean we have put in -- I think we've put in the  
10 majority of our exhibits. I think it's a quite  
11 manageable volume. It won't take up a wall.

12 THE COURT: Oh. Well, I've learned one  
13 thing from this case. In a case of this sort, do not  
14 request two copies of all the exhibits. All right,  
15 just as long as we're on the same issue and we  
16 understand one another. Exhibits that are identified  
17 as supporting a particular witness, the exhibits  
18 themselves can go out, but not the -- not the  
19 binders. I haven't looked at --

20 MR. FINKELSON: I was -- I was getting  
21 ready, Your Honor. You were looking at me like you  
22 were going to tell me I was crazy, so --

23 THE COURT: Well, I thought -- I thought we  
24 were talking about something like this, and I'm  
25 holding up a plain binder. But just be concerned

1 about getting all of the exhibits to the jury.  
2 That's generally my practice unless there's a reason  
3 why an exhibit should not go out. And I see none of  
4 that at this -- in this case.

5 MR. FINKELSON: Thank you.

6 THE COURT: All right. Recess until 1:40.

7 (Luncheon recess taken, 12:37 p.m.)

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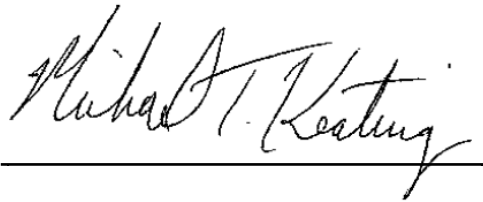


CERTIFICATION

I, Michael Keating, do hereby certify that  
the foregoing is a true and correct transcript from the  
electronic sound recordings of the proceedings in the  
above-captioned matter.

2/3/17

Date

A handwritten signature in cursive script, reading "Michael T. Keating", written over a horizontal line.

Michael Keating